SA-VA100

SERVICE MANUAL

US Model
Australian Model

• REAR SPEAKER

• FRONT SPEAKER SYSTEM

CD SECTION	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM-41
	Optical Pick-up Type	KSM-2101BBM (S)
TAPE SECTION	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	TCM-190RB53C

SPECIFICATIONS

Audio Power Specifications

For center and front full range speakers:
With 8 ohm loads both channels driven, from 70 – 20,000 Hz; rated 23 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 milliwatts to rated output

CD player section

System
Compact disc digital audio system
Laser
Semiconductor laser (λ = 780 nm)
Emission duration: continuous
Laser output
Max 44.6 µW *
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength
780 - 790 nm
Harmonic Distortion
Less than 0.1%
Frequency response
2 Hz - 20 kHz ±1 dB
Signal-to-noise ratio
More than 90 dB
Dynamic range
More than 90 dB

Tuner section

FM stereo, FM/AM superheterodyne tuner
FM tuner section
Tuning range
87.5 – 108.0 MHz (100 kHz step)
Intermediate frequency
10.7 MHz
Antenna
FM lead antenna
Antenna terminals
75 ohm unbalanced
AM tuner section
Tuning range
530 - 1,710 kHz (with the interval set at 10 kHz)
531 - 1,710 kHz (with the interval set at 9 kHz)
Intermediate frequency
450 kHz
Antenna
AM loop antenna, External antenna terminals

HOME ENTERTAINMENT AUDIO SYSTEM

MICROFILM

SONY®

Amplifier section

Continuous RMS power output
Total 160 W
Center tweeter
34 W (8 ohms at 10 kHz, 9 % THD)
Front full range
29 W + 29 W (8 ohms at 1 kHz, 9 % THD)
Super Woofer
34 W (8 ohms at 40 Hz, 9 % THD)
Rear
34 W (8 ohms at 1 kHz, 9 % THD)
Input sensitivity/impedance
VIDEO 1 and 2 : 245 mV, 47 kilohm
Output sensitivity/impedance
VIDEO 1 and 2 : 245 mV, 1 kilohm
External Center : 34 W (at 8 ohms, 1 kHz, 9 % THD), 8 – 16 ohms
Rear : Accepts only supplied rear speakers SS-SR151 17 W + 17 W (at 16 ohms, 1 kHz, 9% THD)
LINE IN: Accepts only SA-VA100 R-ch speaker
LINE OUT: Accepts only SA-VA100 L-ch speaker
Video Input/Output
VIDEO 1 and 2, MONITOR :
1 Vp-p, 75 ohms unbalanced, sync negative

Tape player section

Recording system
4-track 2-channel stereo
Frequency response (DOLBY NR OFF)
40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette
40 – 14,000 Hz (±3 dB), using Sony TYPE II cassette
Wow and flutter
0.12% W. RMS (NAB)

Speaker Section

Type
Front speaker
Bass reflex type
DBR super woofer
SAW type
Rear speaker
Bass reflex type
Speaker units
Front speaker system
Center tweeter: 5 cm cone type (x2)
Front full range/Center woofer : 10 cm cone type (x2)
Super woofer: 16 cm cone type (x2)
Rear Speakers
8 cm cone type (x2)

General

Power requirements
U. S. A. model: 120 V AC, 60 Hz
Australian model: 240 V AC, 50 Hz
Power consumption
Left : 110 W
Right : 35 W
Dimensions
Front: Approx. 280 x 1100 x 450 mm (w/h/d, including speaker base) ($11^{1}/_{8}$ x $43^{3}/_{8}$ x $17^{3}/_{4}$ inches)
Rear: Approx. 110 x 160 x 145 mm (w/h/d) ($4^{3}/_{8}$ x $6^{3}/_{8}$ x $5^{3}/_{4}$ inches)

Mass
Front (L): 22 kg (48 lb 8 oz)
Front (R): 23 kg (50 lb 11 oz)
Rear: 700 g/pc (1 lb 9 oz)

Supplied accessories

Front L/R speaker connecting cord, 3.5 m (1)
Audio cord, 3 m (1)
Video cord, 2 m (1)
Rear speaker SS-SR151 (2)
Rear speaker connecting cord, 10 m (2)
FM lead antenna (1)
AM loop antenna (1)
Remote commander (remote) RM-U100AV (1)
Sony SUM-3 (NS) batteries (2)
Speaker stand (2)
Screw (12)

Design and specifications are subject to change without notice.

This system incorporates Dolby Pro Logic Surround.*

* Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby," the double-D symbol ◻◻ and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

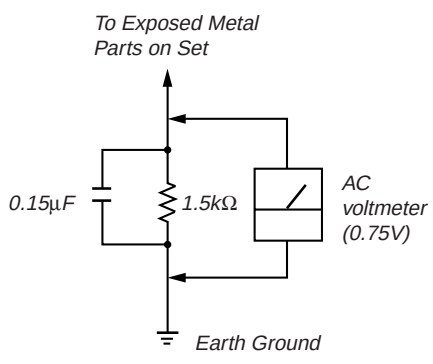

Fig. A. Using an AC voltmeter to check AC leakage.

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CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

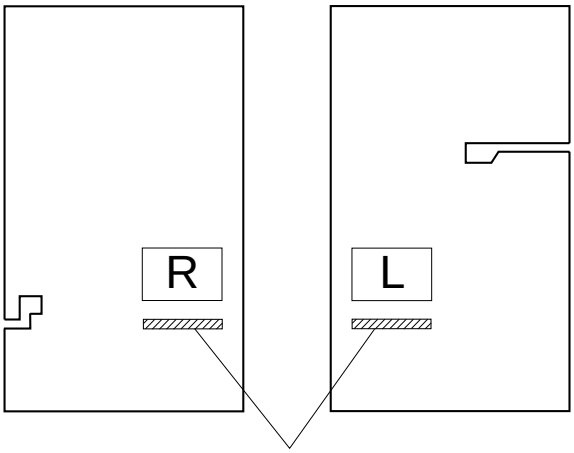
Flexible Circuit Board Repairing
- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MODEL IDENTIFICATION — BACK PANEL —

• Abbreviation
AUS: Australian model



Parts No.

MODEL	PARTS No.
US model (Right)	4-981-882-0 □
AUS model (Right)	4-981-882-1 □
US model (Left)	4-981-883-0 □
AUS model (Left)	4-981-883-1 □

SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output four times.

Cold Reset

Mode which clears all the user memories of this unit and sets them to the same state as that at shipment.

Method:
Press the DOLBY NR button, ■ button, and DISC 7 button together.

SHIP mode

This unit is provided with a SHIP mode to reduce damages of the mechanism section due to shocks during transportation. Set this mode after repairs before returning the product to the customer.

1. Press the SYSTEM POWER button, and check that all discs 1 to 7 are not in their trays.
2. Press the DOLBY NR button, ■ button, and DISC 7 button together, and perform cold reset.
3. Press the DIRECTION button, ■ button, and DISC 7 button together.
4. SHIP is displayed on the fluorescent display tube to indicate that the SHIP mode has been set.
5. When the mechanism section stops operating, disconnect the AC plug from the outlet.

Exiting the SHIP mode:
Insert the disconnected AC plug into the outlet again.

Fluorescent display tube, all LEDs lit, key-check mode

Method:
1. In the STANDBY state, press the DOLBY NR button, ■ button, and DISC 6 button together. All the fluorescent display tubes and LEDs light up.
2. Press any one button to set the key check mode.
3. When the key check mode is set, KEY TEST is displayed on the fluorescent display tube.
4. Total pressed number of buttons are displayed below the display. (When the ◁, ▷, ▯▯, O buttons are pressed, the LEDs light up. Each time the DISC 1 to 7 buttons are pressed, the LEDs light up alternately in orange and green.)
   Buttons already pressed once will not be counted when pressed again.
5. When all 26 buttons are pressed, SUM OK is displayed on the fluorescent display tube.
6. To exit the mode, disconnect the AC plug from the outlet.

OSD Color Bar Mode (OSD:On Screen Display)

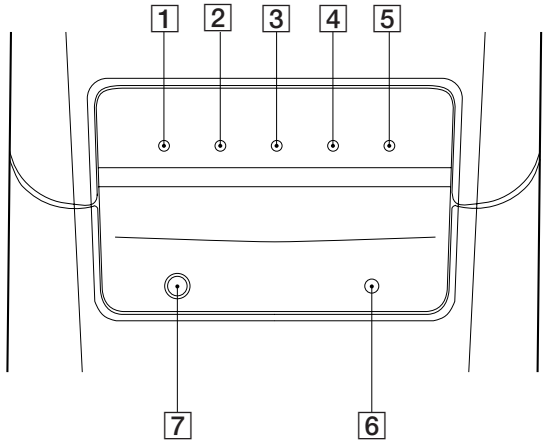
To check the video system of this unit, check that the color bar signal can be output.
1. In the STANDBY state, press the DOLBY NR button, ■ button, and OPEN/CLOSE button together.
2. The color bar is output.
   The color bar signal is output from the MONITOR OUT terminal.
3. To exit the mode, disconnect the AC plug from the outlet.

SECTION 2
GENERAL

This section is extracted from instruction manual.

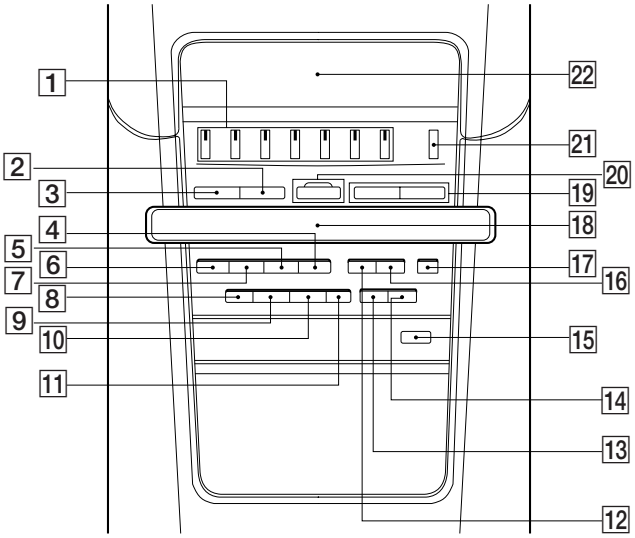
Location of Parts and Controls

Left Front Speaker -Front panel-



1 READY indicator
2 OPERATE indicator
3 CENTER SPEAKER EXT indicator
4 CENTER SPEAKER INT indicator
5 SPEAKERS indicator
6 SPEAKER ON/OFF button
7 HEADPHONES jack

Right Front Speaker -Front panel-

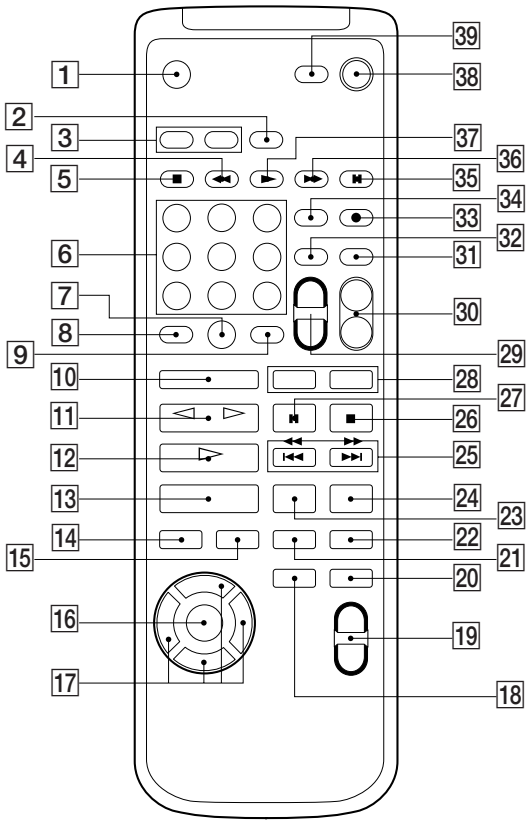


1 DISC 1 to 7 buttons
2 SURROUND button
3 FUNCTION button
4 ▶▶/▷▷I button
5 ▷ button
6 I◁◁/◀◀ button
7 ◁ button
8 BAND button
9 TUNING – button
10 TUNING + button
11 TUNING MODE button
12 ■ STOP button
13 DOLBY NR button
14 DIRECTION button
15 EJECT ⏏ button
16 II PAUSE button
17 ○ REC button
18 Disc tray
19 MASTER VOLUME +/– buttons
20 SYSTEM POWER button and ON/STANDBY indicator
21 ⏏ OPEN/CLOSE button
22 Display window

Power turns off and on automatically when the FUNCTION is set to VIDEO 1 or VIDEO 2

When the speakers are turned on and the FUNCTION is set to VIDEO 1 or VIDEO 2, the power turns off automatically (and the READY indicator on the left speaker turns red) three minutes after the program ends and the sound signal goes out.
The speakers turn themselves back on the next time you start playback from a source connected to VIDEO 1 or VIDEO 2. Therefore, you don't have to bother using the power switch every time you use the speakers with a video source.

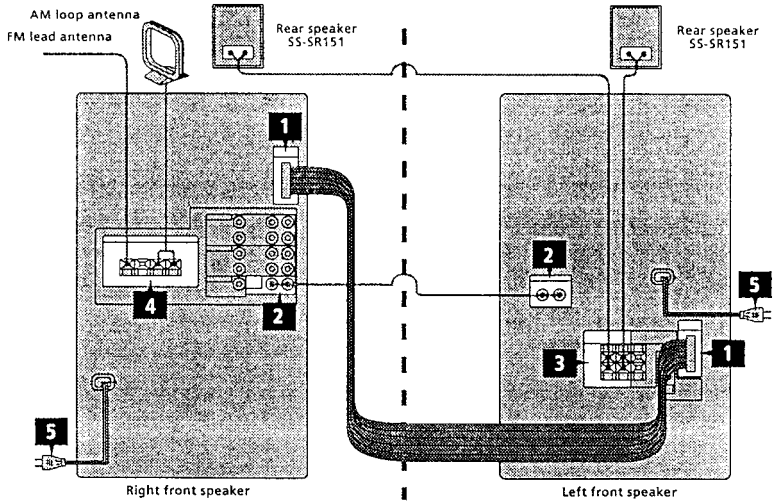
Remote commander



1 MUTING button
2 TV CONTROL button
3 Video Source buttons (VIDEO1, VIDEO2)
4 ◀◀ /PIP button
5 ■ /DISPLAY button
6 Numeric buttons
7 10/0 button
8 >10 button
9 VISUAL ENTER button
10 TUNER BAND button
11 TAPE ◁ ▷ button
12 CD ▷ button
13 OSD ON/OFF button
14 RETURN button
15 EXIT button
16 ENTER button
17 Cursor button
18 TUNER MEMORY button
19 VOL buttons
20 SW. MODE button
21 REPEAT button
22 PLAY MODE button
23 DISC SKIP button
24 I/ALL DISCS button
25 I◀◀ /▶▶I (CD), ◀◀/▶▶ (TAPE) buttons
26 ■ button
27 II button
28 TUNING –/+ buttons
29 TV VOL buttons
30 CH buttons
31 SUB CH/– button
32 TV/VIDEO button
33 ●/+ button
34 ANT TV VTR button
35 II/JUMP button
36 ▶▶/POSITION button
37 ▶/SWAP button
38 POWER button
39 VISUAL POWER button

Speaker and System Hookups

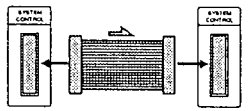
This section describes how to connect the system.



The arrow ⇨ indicates signal flow.

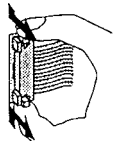
1 Connect the supplied flat cord to the SYSTEM CONTROL CONNECTOR connectors so that it clicks in place

Right front speaker Left front speaker



To connect, depress the middle of the male connector until it clicks into the female connector.

To disconnect, pull the connector out. Never pull the cord itself.



Note

Be sure to disconnect the AC power cord before disconnecting or connecting the connector.

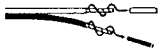
2 Connect the supplied audio cord from the LINE OUT jacks on the right front speaker to the LINE IN jacks on the left front speaker.

Right front speaker Left front speaker

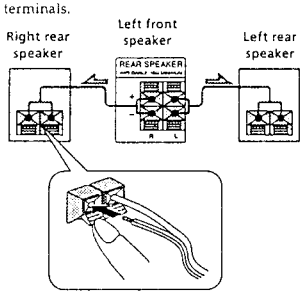
(continued)

3 Use the supplied speakers cord to connect the left and right rear speakers.

1 Twist the speaker cord coating and strip it from the end of the cords.



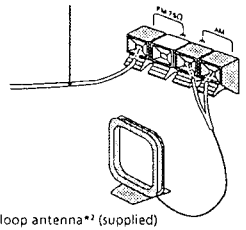
2 Insert the stripped wire into speaker terminals.



Be sure to connect matching speaker terminals (e.g. use the striped wire to connect + to +, and use the solid wire to connect – to –). If the connections are reversed (+ to –), the sound will be distorted and lack bass.

4 Connect the FM and AM antenna.

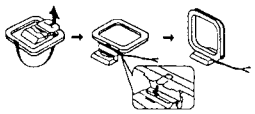
FM lead antenna*1 (supplied)



AM loop antenna*2 (supplied)

*1 Note: Extend horizontally and affix in the position with optimum reception.
*2 Note: Orient toward the direction with optimum reception.

Assemble the supplied AM loop antenna as shown below.



Note

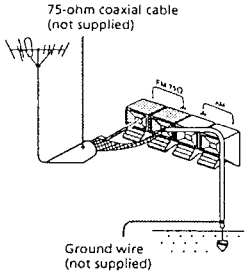
To prevent noise pick-up, keep the AM loop antenna away from the unit and TV set.

To improve the FM reception

Connect an external FM antenna to the FM 75 Ω and ⏚ terminals, using a 75-ohm coaxial cable.

Important

Ground the external antenna from ⏚ terminal against lightning with the screw clamp. To prevent a gas explosion, do not connect the ground wire to a gas pipe.



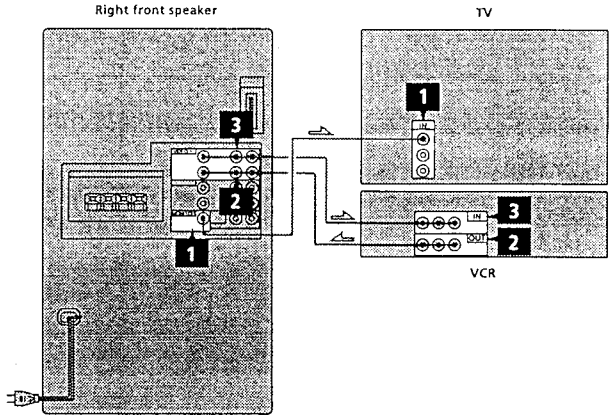
To improve the AM reception

We recommend that you purchase and connect the optional Sony antenna to the unit if reception is weakened by ferroconcrete used in the construction of your apartment or building.

5 Connect the AC power cords from the left and right speakers to wall outlets.

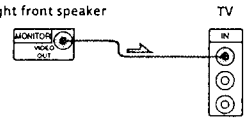
A/V Hookups

This section describes how to connect the system and how to connect your TV or VCR to the speakers.
For the best possible sound and fully integrated on-screen operations, connect the system directly to your VCR.
The following connections suppress noise from the TV and let you enjoy high quality sound.

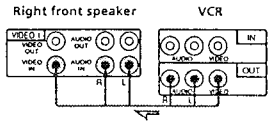


The arrow ⇨ indicates signal flow.

1 Connect the supplied video cord from the MONITOR (VIDEO OUT) jack on the right front speaker to the video input jack on your TV.

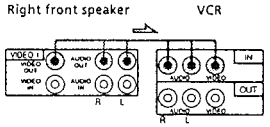


2 Connect an audio/video cord (not supplied) from the VIDEO 1 (AUDIO IN/VIDEO IN) jacks on the right front speaker to the line out jacks on your video component (VCR).
If you have an additional video component (VCR or LD player), connect it to the VIDEO 2 (AUDIO IN/VIDEO IN) jacks.
Be sure to match the color of the plugs and the jacks.



(continued)

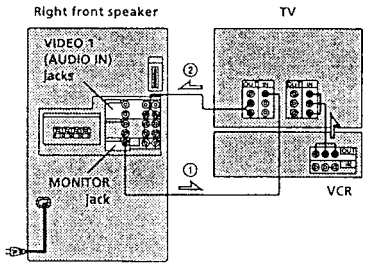
3 Make this connection if you want to record from the CD player, FM/AM tuner or tape deck, or an additional video components.
Connect an audio/video cord (not supplied) from the VIDEO 1 (AUDIO OUT/VIDEO OUT) jacks on the right front speaker to the line in jacks on your video component (VCR).
If you connected an additional video component (VCR) to the VIDEO 2 (AUDIO IN/VIDEO IN) jacks, you may also want to make connections to the VIDEO 2 (AUDIO OUT/VIDEO OUT) jacks.
Be sure to match the color of the plugs and the jacks.



Quick connections (For customers with TVs with stereo audio out jacks)

If the audio and video output terminals on your TV and VCR are already connected, and your TV has stereo AUDIO OUT jacks, you can start enjoying surround sound simply by connecting the system to your TV as shown below.

Important
- Set the volume on your TV to MIN (minimum).
- If your TV has an ON/OFF switch for its internal speaker, set it to OFF and enjoy the sound from this system.



The arrow ⇨ indicates signal flow.

① Connect the supplied video cord from the MONITOR (VIDEO OUT) jack on the right front speaker to the video input jack on your TV.

② Connect an audio cord (not supplied) from the VIDEO 1 (AUDIO IN) jacks on the right front speaker to the line out jacks on your TV.

Notes
- Do not connect the speakers to the TV output jacks corresponding to the same function as the TV input jacks connected to the VCR (in other words, if the VCR is connected to the TV's VIDEO 1 IN jacks, do not connect the speakers to the TV's VIDEO 1 OUT jacks).
- Be sure to match the color of the plugs and the jacks.

If you use AUDIO OUT jacks marked VARIABLE
After making the connection as shown above, turn up the volume on the TV. Use this speaker system's volume control for regular volume adjustment. Turning down the volume on the TV reduces the AUDIO OUT signal level and may cause a loss in sound quality and/or the auto-power off function (see page 27) to function.

To view the on-screen display on your TV

The following procedure applies to both standard and "quick" connections.

1 Turn on your TV and set its input selector to the correct video input (the video input which you connected to this system's MONITOR (VIDEO OUT) jack).

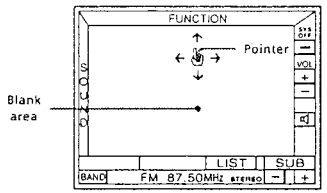
2 Press POWER on this unit's remote to turn on the system.

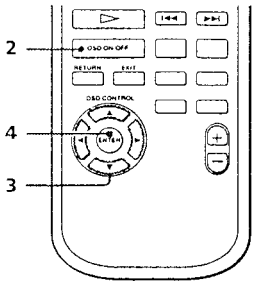
3 Press OSD ON/OFF on the remote control to turn on the on-screen display.

Note
With the quick connections, you cannot display the on-screen display while watching video components connected to the other inputs on your TV.

Controlling the On-Screen Display (OSD)

The supplied remote also lets you perform almost all of the system operations using the on-screen display.





1 Be sure the input selector on your TV is set to video. If the input selector is set to TV, the on-screen display will not appear when you press OSD ON/OFF.

2 Press the OSD ON/OFF button so that the on-screen display appears on your TV screen.

3 Press the section of the OSD CONTROL representing the direction you want to move the pointer (hand shaped icon) in the on-screen display.

Position the pointer so that the finger tip is positioned on one of the on-screen items.

4 Press and quickly release the ENTER button in the center of the OSD CONTROL to "click" the item.

To return to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu
Click EXIT or press EXIT on the remote control.

The on-screen display turns black-and-white (and may be difficult to see) when watching black-and-white program sources from VIDEO 1 or 2.
In this case, use VISUAL OFF (see page 59) or switch to a non-black-and-white source before using the on-screen display. Switch back to the black-and-white video source once you've completed the desired on-screen operation.

For specific information regarding the functions available through OSD. Refer to the chapter for the respective function.

Enjoying Surround Sound

You can take advantage of surround sound simply by selecting one of the pre-programed sound fields according to the type of program you want to play. To obtain the best possible sound we recommend equalizing the speaker levels of the DOLBY SUR and THEATER sound modes before you begin (see "Adjusting the Speaker Output Levels" on page 27). This system is provided with four different surround modes:

DOLBY SUR. (Dolby Pro Logic Surround) mode
Reproduces superb theater-like presence and surround effects from video software encoded with Dolby Surround.

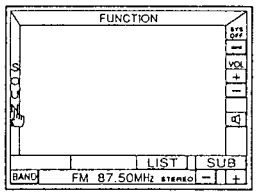
Note
Some videos and laser discs may use Dolby Surround sound even if it's not indicated on the package.

THEATER mode
Creates a theater-like environment in your living room by adding the acoustic reflections of a theater to decoded Dolby Surround signals.

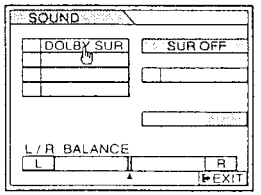
HALL mode
Reproduce the acoustics of a rectangular concert hall. Ideal for soft, acoustic sounds, or for giving an extra punch to debates and press conferences.

SIMULATED mode
Creates simulated stereo sound effects from monaural sound sources, like old movies or TV shows.

1 While playing a program source, click SOUND in the main menu.



2 Click the sound mode you desire according to the descriptions above.



To listen without surround effects
Click SUR OFF.

To adjust the balance
Click L/R BALANCE L or R.
Balance settings are stored separately for each sound mode.

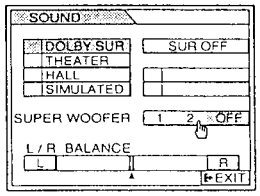
To mute the sound
Click [◁] in the main menu. The icon changes to [✕] and turns green. "MUTE ON" appear in the display on the receiver and the MUTING indicator on the front panel lights up. To turn the sound back on, click on the icon again.

To mute the sound without the on-screen display.
Press MUTING on the remote so that "MUTING" appears in the display on the right speaker.
Press again to restore the sound.

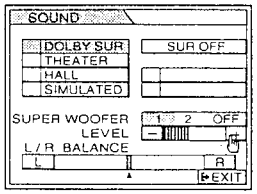
To select sound modes without the on-screen display
Press SURROUND on the speaker repeatedly so that the surround mode you desire appears in the display on the speaker.

To select a suitable super woofer mode

Click SUPER WOOFER (or press SW MODE on the remote) repeatedly.
SUPER WOOFER 1 provides powerful bass sound ideal for movies. SUPER WOOFER 2 is a more subtle effect designed for music.



Then click LEVEL + or –.
The level settings are stored separately for SUPER WOOFER 1 and SUPER WOOFER 2.



To turn off the sound fields
Click SUR OFF.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

To select a super woofer without the on-screen display.
Press SW.MODE on the remote repeatedly so that S.WOOFER 1 (SUPER WOOFER 1) or S.WOOFER 2 appears in the display on the right speaker.

For other sound adjustments, see page 28.

The speakers turn off and on automatically (Auto power off/on function)
When the speakers are turned on and the FUNCTION is set to VIDEO 1 or VIDEO 2, the power turns off automatically (and the READY indicator on the left speaker turns red) three minutes after the program ends and the sound signal goes out.
The speakers turn themselves back on the next time you start playback from a source connected to VIDEO 1 or VIDEO 2.

Adjusting the Speaker Output Levels

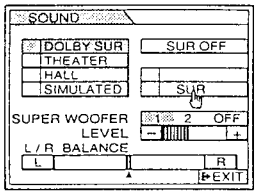
The test tone feature lets you set the volume of your speakers to the same level.
Be sure to make these adjustments from your listening position.

1 Click SOUND in the main menu.

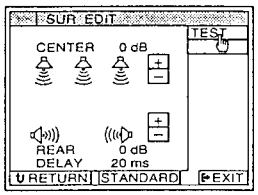
2 Click DOLBY SUR (PRO LOGIC) or THEATER.

3 If you need to adjust the volume between the front right and front left speakers, click BALANCE L or R.

4 Click SUR.



5 Click TEST.
The tone is emitted from each speaker sequentially. The speaker emitting the test tone is shown in red on the TV screen.



6 Adjust the volume levels so that you hear the test tone from each speaker at the same volume level when you are in your listening position:

To adjust the level of center speaker
Click CENTER + or –.

To adjust the level of rear speakers
Click REAR + or –.

7 Click TEST to turn off the test tone.

(continued)

To adjust the volume of all speakers at the same time
Press VOL + or – on the remote.

To reset the current sound field to the original factory settings
Click STANDARD.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.
If the test tone is on, it turns off automatically.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.
If the test tone is on, it turns off automatically.

Customizing the Sound Fields

Each sound field is composed of an tone (bass and treble) and surround sound parameters — variables of sound, that create the sound image.
You can customize the sound fields by adjusting the speaker level (LEVEL) and delay time (DELAY) surround parameters to suit your listening situation.
Once you customize the sound fields, they are stored in memory unless the system is unplugged for about 1 week.

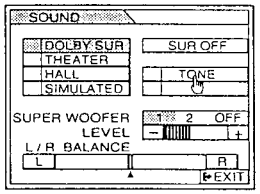
Adjusting the tone

Adjust the tone of the front, center and rear speakers for optimum sound. You can adjust the tone of all sounds fields, including Dolby Surround.

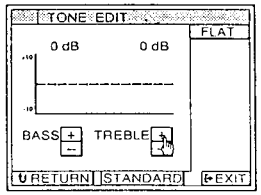
1 Start playing a program source, then click SOUND in the main menu.

2 Click the sound field you want to adjust.

3 Click TONE.
The TONE EDIT menu appears.



4 Click BASS + or – to adjust the level of the low frequencies and click TREBLE + or – to adjust the level of the high frequencies as you desire.



Note
You may hear some noise as you adjust the parameters.

To start adjustment with a flat equalizer curve.
Click FLAT

To reset the tone parameter of the selected sound field to the original factory settings
Click STANDARD.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

To adjust the volume
Press VOL + or – on the remote

Adjusting surround sound parameters

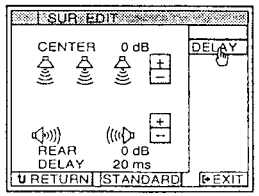
You can adjust the delay time and speaker levels individually for each sound field.
Delaying the output from the rear speakers (delay time) helps to make the surround sound more effective. For example, if you've placed the rear speakers in a large room or apart from your listening position, set the delay time shorter.
Although we recommend using the procedure described in "Adjusting the Speaker Output Levels" on page 27 for the DOLBY SUR and THEATER sound fields, you may need to adjust the HALL and SIMULATED speaker levels as shown below.

1 Start playing a program source, then click SOUND in the main menu.

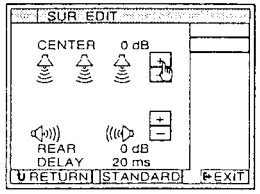
2 Click the sound field you want to adjust.

3 Click SUR.
The SUR EDIT menu appears.

To adjust the delay time
Click DELAY repeatedly to select the delay time you prefer (15 ms, 20 ms, or 30 ms).



To adjust the speaker levels
Click the + or – icon located next to the speakers to adjust the speakers to the levels you prefer.



To reset the delay time and speaker levels to the original factory settings.
Click STANDARD.

Note
You may hear some noise as you adjust the parameters.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

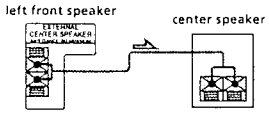
To exit to the main menu.
Click EXIT or press EXIT on the remote control.

To adjust the volume
Press VOL + or – on the remote

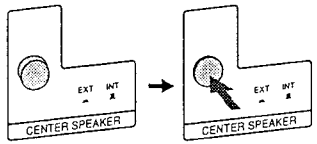
Note
If you make new adjustments to a sound field, the previous settings are replaced by the new ones.

Using an External Center Speaker

Since this system incorporates a center speaker (see page 5), you don't have to connect a center speaker. However, it is possible to connect a center speaker to the CENTER SPEAKER terminals if you already have one. Be sure to use a speaker with a 8 to 16 ohm impedance for the center speaker.



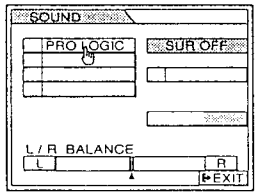
Depress the CENTER SPEAKER button on the rear panel of the left front speaker. This turns off the internal center speaker and directs the center channel signal to the CENTER SPEAKER terminals.



Connecting an external center speaker lets you choose from 4 different Dolby Pro Logic Surround center modes: NORMAL, WIDE, 3 CH (3 Channel logic), or PHANTOM. Use the NORMAL or WIDE mode. For details on Dolby Pro Logic Surround sound, see the "Glossary" on page 64.

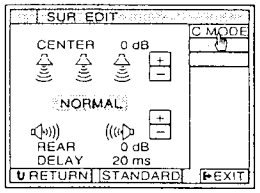
1 Click SOUND in the main menu.

2 Click PRO LOGIC to select the pro logic sound field.



3 Click SUR.
The SUR EDIT screen appears.

4 Click C MODE repeatedly until the center mode you want is displayed.



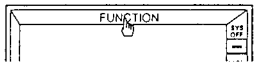
5 Adjust the speaker volumes and delay time, if necessary, by referring to pages 27 and 29.

Playing a CD (normal play)

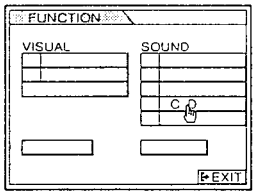
You can play CDs in four modes: normal, shuffle, program and repeat. The mode decides which tracks (songs) you will listen to, which order you will listen in, and whether or not they will repeat.
You can control the unit from the on screen display using the supplied remote.
Before you play a CD, decrease the sound level by pressing VOL – on the remote, to avoid damaging the speakers.
After loading up to seven CDs, you can play all tracks or discs in the original order consecutively (normal play).

Note
You cannot play 8-cm CDs, even with an adaptor.

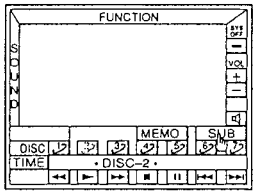
1 Click FUNCTION in the main menu.



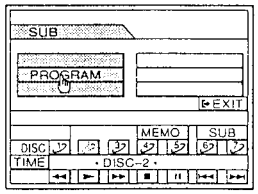
2 Click CD.



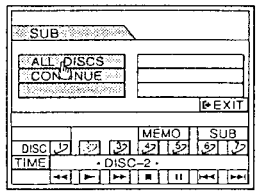
3 Click SUB



4 If PROGRAM or SHUFFLE appear in the SUB menu, click them repeatedly to select "CONTINUE".

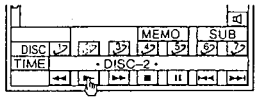


5 Click ALL DISCS (or 1 DISC) to select "1 DISC" or "ALL DISCS".



"1 DISC" plays all the tracks on the current CD in the original order.
"ALL DISCS" plays all the tracks on all the CDs loaded in the unit in the original order.

6 Click ► (play) or click a disc button (1 – 7).
Play starts from the beginning of the selected CD (the CD whose disc indicator is green).



If you click the disc button (1 – 7) for an empty disc tray
"OPEN" appears and the disc tray emerges automatically. Place a CD on the tray with the label side facing up (to insert additional CDs sequentially, press DISC SKIP on the remote), then click the respective disc button again.
The disc tray closes and play starts from the beginning the selected CD.

(continued)

To close the SUB menu
Click EXIT or press EXIT on the remote control.

To	Click
Stop play	■
Pause	II
Resume play	► or II

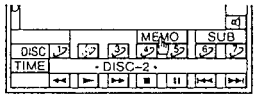
What the disc buttons (1 – 7) indicate
The numbers on the disc buttons (1 – 7) change colors to indicate the status of the respective disc tray.
- A green disc number shows that the tray is selected (either during playback or standby, or when the tray is open) no matter if there is a CD inside or not.
- An orange disc number shows that there is a CD in the disc tray but the tray is not currently selected.

Playing a CD without using the on-screen display
Press CD ▻ on the remote to start playback, the CD function is selected automatically.

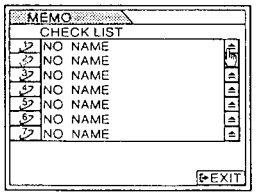
To	Press
Stop play	■ on the remote
Pause	II on the remote
Resume play	CD ▻ or II on the remote

Removing a CD

1 Click MEMO.



2 Click ≜ at the right of the CD you want to eject.



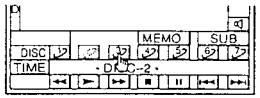
To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Removing a CD using the buttons on the speaker
Press DISC 1 – 7 for the disc you want to eject, then press ≜ OPEN/CLOSE.
The selected disc tray emerges.
Press ≜ OPEN/CLOSE again to close the tray.

Locating a Specific CD

You can locate the beginning of any CD during playback or pause, or when the player is stopped.

To locate the beginning of a particular CD.
Click the corresponding disc button (1 – 7).



To change to the next CD
Press DISC SKIP on the remote.
During playback, the player selects the next CD and starts playback. During stop or pause, the player selects the next CD but remains in stop or pause mode.

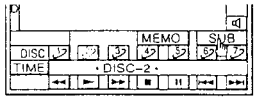
Locating a specific track (automatic music sensor: AMS)

You can quickly locate the beginning of a track on the current CD during play, pause, or stop mode.

To locate	Do this
The next or succeeding tracks	Click ►►I repeatedly until you find the track (or press ►►I on the remote repeatedly).
The current or preceding tracks	Click I◄◄ repeatedly until you find the track (or press I◄◄ on the remote repeatedly).

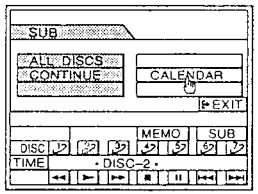
Locating a track directly

1 Click SUB

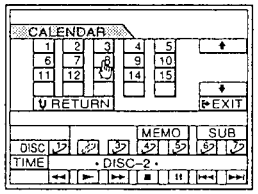


This function is only available when the CD player is set to the CONTINUE play mode.
If PROGRAM or SHUFFLE appear in the SUB menu, click them repeatedly to select "CONTINUE".

2 Click CALENDAR



3 Click the icon for the track you desire.



To display track numbers not shown on the current CD calendar (for CDs with more than 20 tracks).
Click the ↑ or ↓ icon located next to the CD calendar.

To return to the previous menu.
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Locating a track directly without using the on-screen display
Press the numeric button on the remote for the track you want. If the track number is greater than 10, press >10 and the track number.
e.g. For track number 21, press >10, 2, 1.
For track number 20, press >10, 2, 10/0.

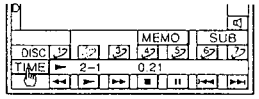
Locating a particular point in a track

You can locate a particular point in a track while monitoring the sound or quickly by observing the display.

To	Click and hold down
Go forward quickly	►► and release it at the desired point.
Go backwards quickly	◄◄ and release it at the desired point.
Search quickly by observing the display during pause	◄◄ or ►► until you find the desired point. You will not hear the sound during this operation.

Checking the remaining or total playing time

Click TIME.



Each time you click TIME while playing a CD, the display changes as follows.

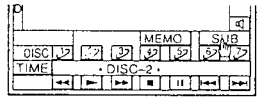
Playing time on current track
↓
Remaining time on current track
↓
Remaining time on CD (normal play only)

Notes
- You can also check the remaining time on the current track during shuffle, and program play.
- The total playing time and number of tracks for the current disc appear in the display if you wait a few seconds after pressing ⏏ OPEN/CLOSE on the front of the right speaker to close a disc tray.

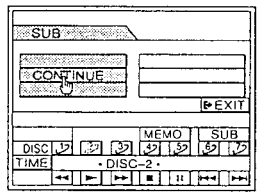
Playing Tracks in Random Order (shuffle play)

You can play all the tracks on one CD or all CDs in random order.

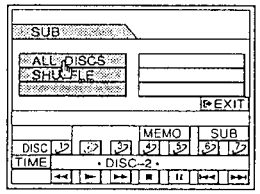
1 Click SUB.



2 Click CONTINUE repeatedly to select "SHUFFLE".

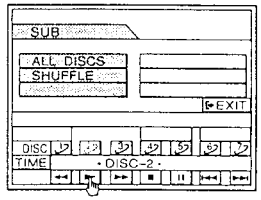


3 Click ALL DISCS (or 1 DISC) to select "1 DISC" or "ALL DISCS".



"1 DISC" plays all the tracks on the current CD at random.
"ALL DISCS" plays all the tracks on all the CDs loaded in the unit at random.

4 Click ►.



To stop playing
Click ■.

To cancel shuffle play
Click SHUFFLE repeatedly to select "CONTINUE". The tracks continue playing in their original order.

To close the SUB menu
Click EXIT or press EXIT on the remote control.

Play the next track during shuffle play
Click ►►|.
To replay the current track from the beginning, click |◄◄.
You cannot replay the previous track.

To select the desired disc during "1 DISC" shuffle
Click the respective disc button (1 – 5).

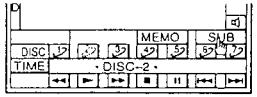
To start shuffle play immediately after the current track.
Press CONTINUE repeatedly during playback to select "SHUFFLE" and shuffle play starts as soon as the current track finishes playback.

Playing tracks in random order without using the on-screen display
1 Press PLAY MODE on the remote repeatedly so that "SHUFFLE" appears in the display on the right speaker.
2 Press 1/ALL repeatedly to select "1 DISC" or "ALL DISCS".
3 Press CD ▻.

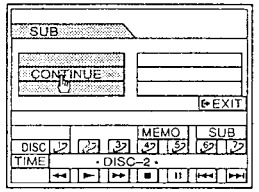
Playing Tracks in a Desired Order (program play)

You can program up to 32 program steps from all the CDs in the order you want them to play. You can program one track or a whole CD in search Program step.
To record a program, see the section "Recording a CD: Specifying Track Order (program edit)".

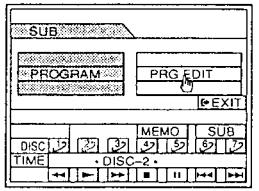
1 Click SUB.



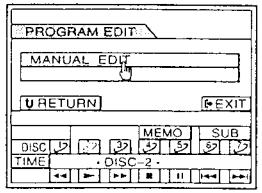
2 Click CONTINUE repeatedly to select "PROGRAM".



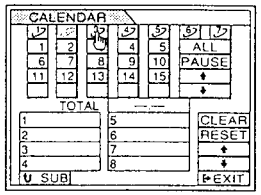
3 Click PRG EDIT.



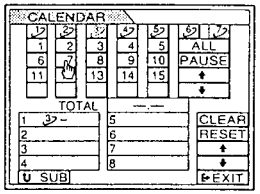
4 Click MANUAL EDIT.



5 Click the disc icon (–) for the disc containing the tracks you want to program.



6 Click the track number for the track you want to program.



To program the entire disc.
Click ALL.

To display track numbers not shown on the current CD calendar (for CDs with more than 20 tracks).
Click the ↑ or ↓ icon located next to the CD calendar.

To check the contents of the program
Click the ↑ or ↓ icon located next to the program steps.

If you make a mistake.
Click CLEAR then click the step(s) you want to remove. When you've finished, click SUB or EXIT.

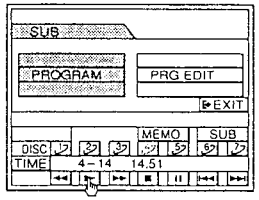
(continued)

To select a track number using the numeric keys on the remote
Press the numeric button corresponding to the track number you desire.
To enter a track number greater than 10, press >10 first, then press the corresponding numeric buttons.
e.g. For 30, press >10→3→10/0

7 Repeat steps 5 and 6 to program up to 32 steps.

8 Click SUB to return to the SUB menu or EXIT to exit to the main menu.

9 Click ►.
All the tracks play in the order you have chosen.



To stop playing
Click ■.

To play	Do this
The next or succeeding tracks	Click ►►I repeatedly until you find the track (or press ►►I on the remote repeatedly).
The current or preceding tracks	Click I◄◄ repeatedly until you find the track (or press I◄◄ on the remote repeatedly).

To cancel program play
Click PROGRAM repeatedly to select "CONTINUE". The tracks continue playing in their original order.

To erase the programed contents
Click RESET in the PROGRAM EDIT menu.

Programming from the remote without using the on-screen display

1 Press ■.
If you switch to program mode during playback, the track being played is automatically programmed as step 1.

2 Press PLAY MODE repeatedly so that "PROGRAM" appears in the display on the right speaker.

3 Press DISC SKIP to select a CD.
The disc number appears and after a few seconds the total playing time begins to flash in the display.

4 Press I◄◄ or ►►I to select a track number.
The track number and the total playing time including the selected track flashes in the display. (The program is not entered at this time.)

To select a track number using the numeric keys
Press the numeric button corresponding to the track number you desire. The track is programmed automatically, so you can skip step 5.
To enter a track number greater than 10, press >10 first, then press the corresponding numeric buttons.
e.g. For 30, press >10→3→10/0

5 Press PLAY MODE to enter the track.
If the track (or disc) number disappears before you press PLAY MODE, go back to step 3.
If you program the wrong track.
Press CLEAR, and go back to step 3.

6 To program additional tracks from the same CD, repeat step 4.
To program additional tracks from another CD, repeat steps 3 and 4.

7 Press CD ▻.
All the tracks play in the order you have chosen.

To cancel program play
Press PLAY MODE repeatedly so that the PROGRAM indicator disappears from the display.

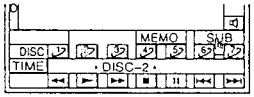
To erase the programmed contents
Press ■ during stop mode or press PLAY MODE repeatedly so that the PROGRAM indicator disappears from the display.

Playing Tracks Repeatedly (repeat play)

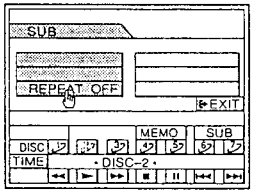
You can choose between two different repeat modes. One repeats all the tracks in the current play mode, the other repeats a single track.

The repeat play repeats a single CD or all CDs during normal and program playback. During shuffle play, repeat play repeats one CD only (1 DISC mode shuffle play). In normal play mode (only), the player can also repeat a single track.

1 Click SUB.



2 Click REPEAT OFF repeatedly to select "REPEAT" to repeat all the tracks (in any play mode), or "REPEAT 1" to repeat a single track while playing the desired track (during normal play only).



Play mode	Tracks to be repeated
Normal play (ALL DISCS)	All tracks on all CDs
Normal play (1 DISC)	All tracks on the selected CD
Shuffle play (1 DISC)	All tracks on the selected CD (reshuffled)
Program play	All programmed tracks/ programs in their programmed order

To cancel repeat play
Click the repeat button repeatedly to display "REPEAT OFF".

Playing tracks repeatedly without using the on-screen display
Press REPEAT on the remote repeatedly so that "REPEAT" or "REPEAT1" appears in the display on the right speaker.

Assigning Names to CDs (disc memo)

You can assign names to your CDs. The names may consist of uppercase and lowercase letters, numbers and symbols (up to 20 characters long for each CD). You can store a maximum of 100 names in the unit. The names appear in the disc memo list, making it easy to identify which CDs are currently loaded.

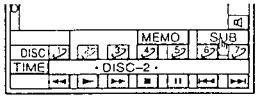
Note
If the AC power cord is disconnected for about one week, the disc memos may be cleared from the memory, and you will have to store the names again.

Before you start assigning names

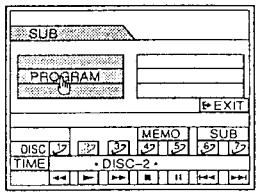
In order to take advantage of the full (100 disc) memory capacity, do steps 1 through 4 of "Erasing all the disc memos" on page 39 to erase the disc memo data entered at the factory.
You only need to perform this procedure once; before assigning names for the first time.

Assigning a Name

1 Click SUB



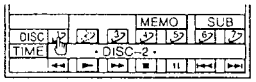
2 If PROGRAM or SHUFFLE appear in the SUB menu, click them repeatedly to select "CONTINUE".



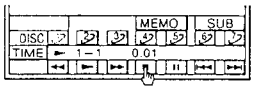
(continued)

Operating the CD Player Using OSD

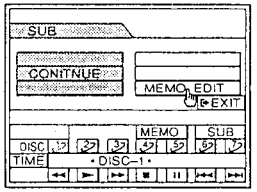
3 Click a disc button to select the disc tray containing the disc to be named. The number on the button turns green if there is a disc in the tray. If not, the disc tray emerges.



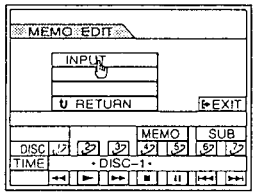
4 Click ■ (or press ■ on the remote).
Names cannot be assigned during playback.



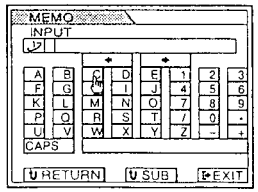
5 Click MEMO EDIT.



6 Click INPUT.



7 Spell out the name by clicking each character in order.



To enter a space
Click the space bar.
(You cannot enter a space as the first character.)

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

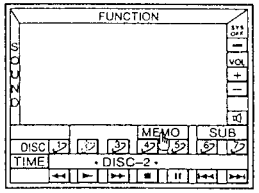
8 Click RETURN or press RETURN on the remote control.
The name is stored automatically.

To assign a name to another disc
Click the disc you want to name, click ■ (or press ■ on the remote), then repeat steps 6 and 7.

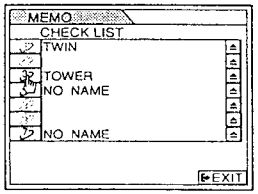
To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Checking the currently loaded CDs

Click MEMO.



The MEMO CHECK LIST showing the names of the currently loaded CDs appears.



To play a CD
Click the respective disc button (د – ر) when the CD player is set to CONTINUE mode.

If a CD has not been assigned a name
"NO NAME" appears next to that disc number.

If a CD is not loaded
The disc number for the respective tray is white and no characters appear next to that button.

If remove or load a CD
Click the ⏏ icon for the respective tray and that tray emerges.
Click again to close the tray.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Erase a disc memo

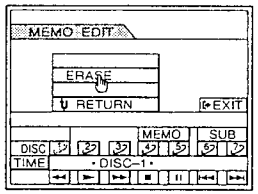
You can erase the names of currently loaded discs.

1 Load the disc whose name you want to erase, and make sure play is stopped.
Names cannot be erased during playback.

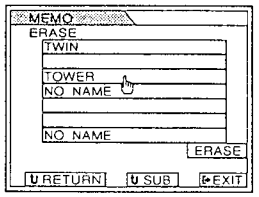
2 Click SUB.

3 Click MEMO EDIT.

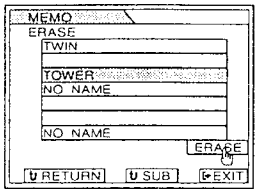
4 Click ERASE.



5 Click The button to highlight the disc memo you want to erase.



6 Click ERASE.
"ERASE OK" appears and the memo is erased.



To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To go back to the SUB menu
Click SUB.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Erasing all the disc memos

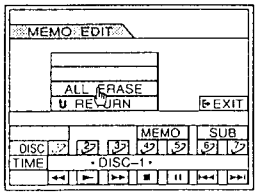
The following procedure lets you erase all the disc memo information stored in the memory.

1 If a CD is playing, click ■ (or press ■ on the remote).
Names cannot be erased during playback.

2 Click SUB.

3 Click MEMO EDIT.

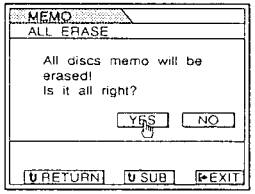
4 Click ALL ERASE.



(continued)

Operating the CD Player Using OSD

5 Click YES to erase all the names currently stored in memory.



To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To go back to the SUB menu
Click SUB.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Listening to the Radio

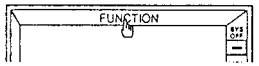
When you want to play a radio program, you can have the tuner automatically scan the radio frequencies and tune in the stations with clear signals. This feature saves you time in searching for stations with clear signals.
However, stations with weak signals may be skipped by automatic tuning. Manually tune in the ones skipped by automatic tuning.

To prevent noise pickup, keep the AM loop antenna away from the unit and TV set.
If the noise is not reduced, turning off your TV may improve reception.

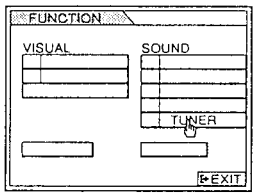
Before you start

make sure you have connected the FM and AM antennas as shown on pages 9 and 10.

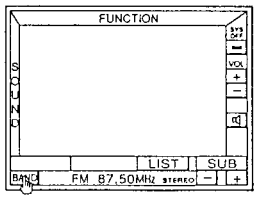
1 Click FUNCTION in the main menu.



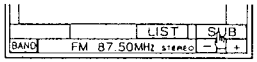
2 Click TUNER .



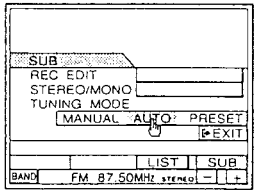
3 Click BAND to select FM or AM.



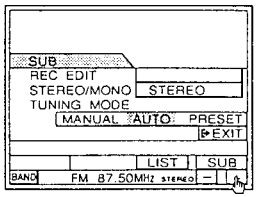
4 Click SUB



5 Click TUNING MODE repeatedly to select AUTO.



6 Click + or – next to the frequency to tune in a station.



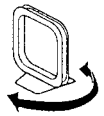
The tuner starts scanning radio frequencies and stops automatically when it finds a clear station. When an FM stereo broadcast is received, "STEREO" turns from grey to orange.
When you tune past either end of the band, the tuner automatically jumps to the opposite end and continues scanning in the same direction. Every time a station is received, the tuner stops scanning. To continue scanning, press the icon again.

When the desired station is not tuned in
Automatic tuning may skip stations with a weak signals. Tune in the station manually.
1 Click TUNING MODE repeatedly to select "MANUAL".
2 Click + or – repeatedly until the desired station is tuned in.

(continued)

When reception of an FM program is unclear
You can switch to monaural reception. There will be no stereo effect but the reception will improve.
Click STEREO/MONO repeatedly to select "MONO". "MONO" also appears next to the frequency.
To restore the stereo effect, repeat this procedure to select "STEREO".

To improve AM broadcast reception
Reorient the supplied AM loop antenna.



To change the AM tuning interval
The AM tuning interval is preset to 10 kHz in the factory.
To change the interval to 9 kHz, do as follows:
1 Turn on the power.
2 Change the band to AM.
3 Turn off the power.
4 **Press SYSTEM POWER while pressing TUNING+ on the unit. The power turns on and the interval is changed.**
After changing the AM tuning interval, reset the preset radio stations. To reset the interval to the factory setting (10 kHz), follow the same procedure.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

To watch FM simulcast TV programs
Make sure that you tune in the simulcast program on both the TV (or VCR) and the tuner.

Presetting Radio Stations

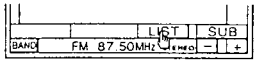
You can store up to 30 FM or AM stations, and recall them later with a simple click.
To assign names to the preset stations, see "Naming Preset Stations".

For the customers in Australia
The AM tuning interval is preset to 10 kHz in the factory. Before you preset AM stations, be sure to change the AM tuning interval to 9 kHz referring to "To change the AM tuning interval" on the page.

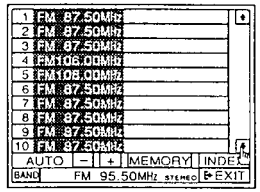
Note
If the AC power cord is disconnected for about one week, the preset stations may be cleared from the memory, and you will have to preset the stations again.

1 Tune in a station you want to store in the preset memory.

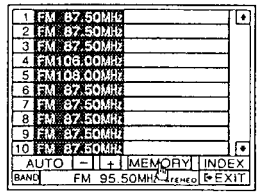
2 Click LIST to display the tuner's preset list.



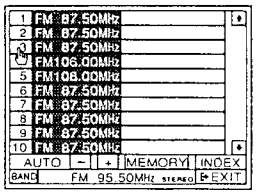
3 Click ↑ or ↓ to display the preset button (1~30) where you want to store the station.



4 Click MEMORY.
MEMORY turns red.



5 Click the button where you want to store the station.
The button lights up and the station is stored.



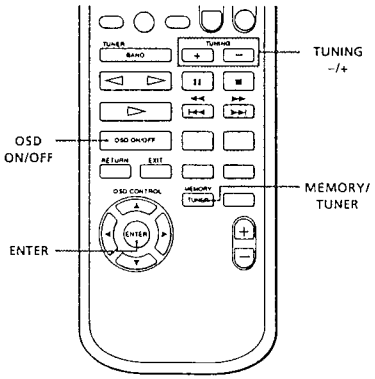
6 Repeat steps 1 through 5 to preset up to 30 stations.

To erase a stored station
Store a new station at a previously used preset button. This will erase the old station and replace it with the new station.

If you have trouble storing a station or if you made a mistake
Repeat steps 1 through 5.
Make sure that the MEMORY button is red when you proceed to step 5. If not, press MEMORY again so that MEMORY turns red, then proceed with step 5 while MEMORY is red (within 16 seconds).

Presetting radio stations without using the on-screen display

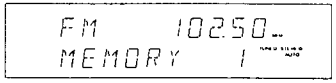
You can also preset stations without using the on-screen display. You might find this necessary to preset broadcasts that are difficult to receive when the TV is turned on, such as those from AM stations.



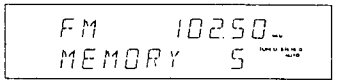
1 Press OSD ON/OFF to turn off the on-screen display, then turn off your TV.
"OSD OFF" appears momentarily in the display.

2 Tune in a station you want to store in the preset memory.

3 Press MEMORY/TUNER.
"MEMORY" and a preset channel number appear in the display.



4 Press TUNING + or – to select a preset channel number.



5 Press ENTER.
The station is stored at the preset channel number you selected.

6 Repeat steps 2 through 5 to store as many stations as necessary.

Tuning Preset Stations

Once you have preset the stations, you can tune stations directly from the tuner's preset list or one by one from the main menu or remote control.

Tuning Preset Stations Directly

1 Click FUNCTION in the main menu.

2 Click TUNER .

3 Click LIST to display the tuner's preset list.

4 Click ↑ or ↓ to display the preset station (1~30) you desire.

5 Click the preset number of the station you desire.

(continued)

Tuning Preset Stations One by One

1 Click FUNCTION in the main menu.

2 Click TUNER .

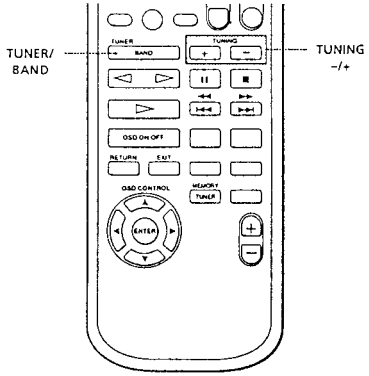
3 Click SUB.

4 Click TUNING MODE repeatedly to select "PRESET".

5 Click + or – next to the frequency to tune in a preset station.

Tuning preset stations without using the on-screen display

You can also tune stations without using the on-screen display. You might find this necessary for broadcasts that are difficult to receive when the TV is turned on, such as those from AM stations.



1 Press TUNER/BAND repeatedly to select FM or AM.

2 Press TUNING MODE on the right front speaker repeatedly so that "PRESET" appears in the display.

3 Press TUNING + or – to tune in desired the preset station.

Naming Preset Stations

You can customize the tuner's preset list by entering names up to 10 characters long for each preset radio station.

1 Click FUNCTION in the main menu.

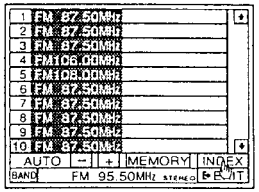
2 Click TUNER .

3 Click LIST to display the tuner's preset list.

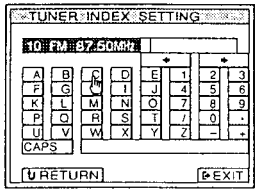
4 Click ↑ or ↓ to display the preset station (1 ~ 30) you want to name.

5 Click the preset number of the station you want to name.

6 Click INDEX.
The TUNER INDEX SETTING menu appears.



7 Spell out the name by clicking each character in order.



To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

8 Click RETURN or press RETURN on the remote control.
The name is stored automatically.

To erase a preset name
You can erase the station name by changing all the characters of that name to "spaces".

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

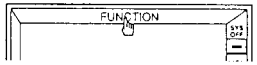
To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
The input name is visible when you click LIST to use the tuner's preset list function.
This name is not shown in the display on the unit.

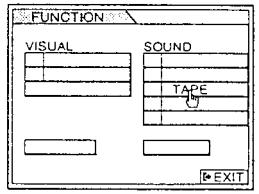
Playing a Tape

You can use TYPE I (normal), TYPE II (CrO2) and TYPE IV (metal) tapes. When you insert a tape, the deck detects the tape type automatically.

1 Click FUNCTION in the main menu.

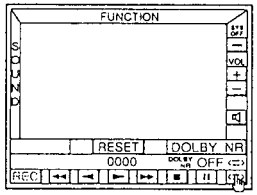


2 Click TAPE.



3 Press EJECT ⏏ on the right speaker to open the tape compartment. Insert a recorded tape in with the tape side down and the side you want to play facing forward. Push to close the compartment. The tape will start playing from the front side.

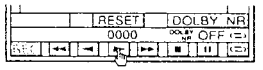
4 Click ⊃ repeatedly to select single or dual-sided playback.



To play	Click to display
One side of the tape	⇉
Each side once	⊃
Both sides repeatedly*	⇄

* The deck stops automatically after playing both sides 5 times.

5 Click ► (to play the front side) or ◄ (to play the reverse side).
The tape starts playing.



To	Click
Stop play	■
Pause	II
Resume play	► or II
Fast Forward	►► for the front side or ◄◄ for the reverse side
Rewind	◄◄ for the front side or ►► for the reverse side

To find the beginning of a track (AMS)
Be sure to use the controls on the unit or the remote for this operation.
Using the AMS (Automatic Music Sensor) feature, you can quickly find the track you're looking for. The deck senses where a music track begins by detecting a blank space of more than four seconds between tracks.

If the side of the cassette being played is the	To play the next track press (remote)	To play the current track press (remote)
Front side (►)	►► (TAPE ►►)	◄◄ (TAPE ◄◄)
Reverse side (◄)	◄◄ (TAPE ◄◄)	►► (TAPE ►►)

Note
The AMS function may not work correctly if:
- the blank space between tracks is less than 4 seconds long.
- the signal strength of the left and right channels are very different.
- there is a passage of low frequencies or a very low volume within a track.

To remove the cassette
Press EJECT ⏏ on the front of the right speaker.

When listening to a tape recorded with the Dolby noise reduction system
Click DOLBY NR repeatedly to select "DOLBY NR: B" or "DOLBY NR: C" according to the noise reduction system used in recording. Dolby noise reduction system reduces tape hiss noise in low-level high-frequency signals.

To reset the tape counter
Click RESET.
The tape counter display returns to "0000". The tape counter is also reset when you unplug the AC power cord or press EJECT ⏏ to switch tapes.

Recording from CD

You can record from a CD to a tape. Use TYPE I (normal) or TYPE II (CrO2) tapes.

Recording from CD Automatically

The CD SYNCHRO function makes it easy to record from a CD to a tape.

1 Press EJECT ⏏ on the right speaker and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

When "NO TAB" is displayed
The tabs on the cassette deck have been removed to prevent accidental erasure.

2 Click FUNCTION in the main menu.

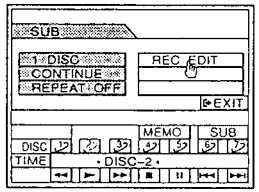
3 Click CD.

4 Click SUB.

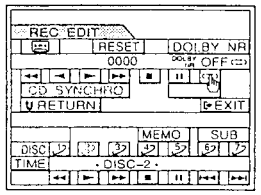
5 Select the play mode you desire and, if necessary, click a disc button (1 ~ 5) to choose a CD.

When the play mode is set to either CONTINUE or SHUFFLE
Clicking a disc button starts playback. In this case, click ■ to stop playback before proceeding to step 6.

6 Click REC EDIT.



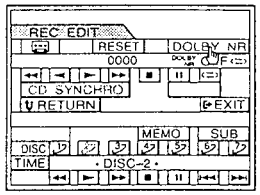
7 Click ⊂⊃ repeatedly to select how to record the tape.



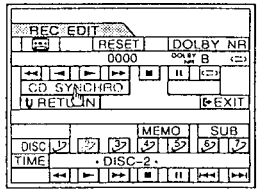
To record	Click to display
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

8 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high- frequency signals.



9 Click CD SYNCHRO.

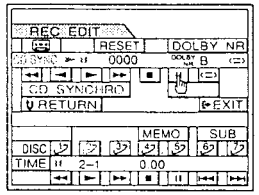


"CD SYNC" appears and the CD player and tape deck enter recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

(continued)

10 Click ❚❚ PAUSE to release recording pause.
Recording starts.
After about 10 seconds, the CD starts to play.



To stop recording,
Click ■ in the REC EDIT control panel.

If the CD SYNCHRO button does not operate
It means that you cannot record on this cassette (the tabs have been removed).

If you press the CD SYNCHRO button while playing a CD
It is cancelled after 10 seconds. The CD SYNCHRO button only works when the CD player is in stop mode.

When you record more than one CD
The tape automatically pauses the recording while the CD player changes the disc trays.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Recording from CD Manually

With manual recording you can record a CD however you like, for example, you can record just the songs you want, or start recording from the middle of the tape.

1 Press EJECT ⏏ on the right speaker and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

2 Click FUNCTION in the main menu.

3 Click CD.

4 Click SUB.

5 Select the play mode you desire and, if necessary, click a disc button (1 ~ 5) to choose a CD.

When the play mode is set to either CONTINUE or SHUFFLE
Clicking a disc button starts playback. In this case, click ■ to stop playback before proceeding to step 6.

6 Click REC EDIT.

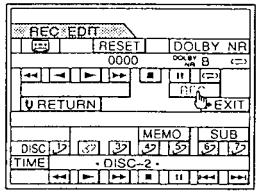
7 Click ⊂⊃ repeatedly to select how to record the tape.

To record	Click to display
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

8 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high- frequency signals.

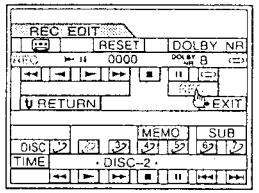
9 Click REC.



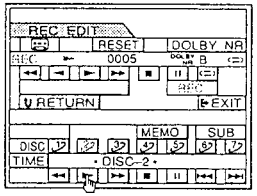
"REC" appears and the tape deck enters recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

10 Click ❚❚, in the REC EDIT control panel, to release recording pause. Recording starts.
You can also start recording by clicking ► or ◄.



11 Click ► in the CD control panel.
The CD player starts playing.



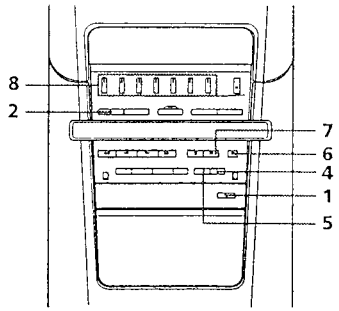
To insert a blank space
See "Inserting a Blank Space During Recording (rec mute)" on page 56.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Notes
- Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.
- If you want to record specific tracks of a CD, the "program edit" feature will make it easier (see page 52).

Recording from CD manually using the controls on the speaker



1 Press EJECT ⏏ and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

2 Press FUNCTION repeatedly to select CD.

3 If "PROGRAM" or "SHUFFLE" appear in the display, press PLAY MODE on the remote control repeatedly until they disappear.

4 Press DIRECTION repeatedly to select how to record the tape.

To record	Select
One side of the tape	⇀
Both sides*	⇁ or ⇄

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

5 Press DOLBY NR repeatedly to select DOLBY NR B or C when you want to reduce tape hiss in low-level, high- frequency signals.

(continued)

6 Press REC.
The ● (REC) and ❚❚ (pause) indicators light up and the deck stands by for recording.
The direction indicators (◄ or ►) light to indicate which sides of the cassette you can use to record. (For a full explanation of the ◄ and ► indicators, see "What the ◄ and ► indicators indicate" on page 50.)

If you want to record on the reverse side only
Press ◄ so the ◄ indicator lights steadily.

7 Press ❚❚, to release the record pause and start recording.

8 Press DISC 1 ~ 7 to start playback from the beginning of the CD you want to record.

To stop recording
Press STOP ■ twice. Once to stop the tape deck and once to stop the CD player.

To insert a blank space
See "Inserting a blank space during recording using the controls on the speaker" on page 57.

What the ◄ and ► indicators indicate
The ◄ and ► indicators light to indicate which side starts recording. They also tell you if a tab has been removed.
- If one indicator lights steadily and the other indicator flashes for a few seconds, then disappears:
  It means that recording will start from the side whose indicator lights steadily. If you want to start recording from the other side, press the button for that side.
- If one indicator lights steadily and the other indicator neither lights or flashes:
  It means you can only record on the side whose indicator lights steadily. (The tab for the other side has been removed.)
- If one indicator flashes steadily and the other indicator neither lights or flashes:
  It means that record on the side whose indicator is flashing steadily. Switch the side, from which to start recording, by pressing the direction button for the side whose indicator is flashing.
- If both indicators neither light or flash:
  It means that you cannot record on this cassette. (Both tabs have been removed.)

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Recording from CD: Selecting Tape Length Automatically (tape select edit)

You can have the CD player select and indicate the most suitable tape length for recording each disc automatically, note that you cannot use this function when the CD has tracks numbered 21 or higher.

1 Click FUNCTION in the main menu.

2 Click CD.

3 Click SUB.

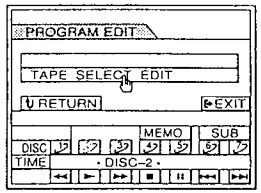
4 Select the CONTINUE play mode.

5 Click a disc button (⑴ ~ ⑺) to choose a CD.
Since playback starts automatically, click ■ to stop playback.
Tape select edit cannot be used during playback.

6 Click CONTINUE repeatedly to select "PROGRAM".

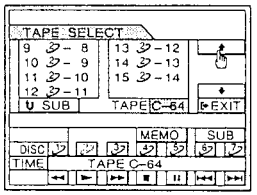
7 Click PRG EDIT.
The PROGRAM EDIT menu appears.

8 Click TAPE SELECT EDIT.

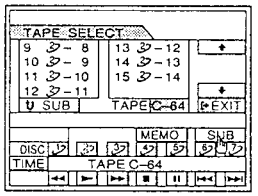


The TAPE SELECT menu appears and the player automatically divides the tracks and displays the tape length required to record the entire CD.

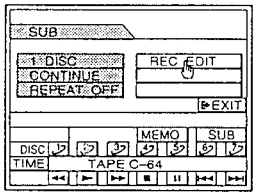
To view the order of the programed tracks
Click ↑ or ↓.



9 Click SUB to return to the SUB menu.



10 Click REC EDIT.
The required tape length remains displayed.



11 Press EJECT ⏏ on the right speaker and insert a blank tape of the indicated length (or longer) into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

12 Click ⇄ repeatedly to select how to record the tape.

To record	Click to display
One side of the tape	⇉
Both sides*	⇉ or ⇄

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

13 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high-frequency signals.

14 Click CD SYNCHRO.
"CD SYNC" appears and the CD player and tape deck enter recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

15 Click ❚❚ PAUSE to release recording pause.
Recording starts.
After about 10 seconds, the CD starts to play.

To stop recording
Press ■ in the REC EDIT control panel.

To cancel the CD program play mode before starting to record (in step 15)
Click PROGRAM repeatedly to select "CONTINUE".
The program play mode cannot be cancelled during synchro recording.

To record another CD using Tape select edit
1 Click ■ to stop playback.
2 Click SUB.
3 Click PRG EDIT.
4 Click MANUAL EDIT.
5 Click RESET to erase the previous tape select edit program, then click SUB<.
6 Click a disc button (1 - 7) to choose a CD, then click ■.
7 Follow steps 7 through 13 above.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

(continued)

Operating the Tape Deck Using OSD

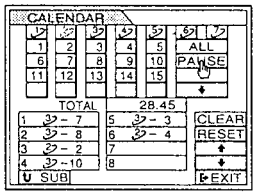
Recording from CD: Specifying Track Order (program edit)

You can match the total recording time to the tape length while making a program.

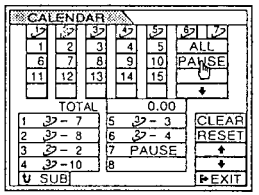
1 Press EJECT ⏏ on the right speaker and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

2 Follow the procedure in steps 1 through 7 of "Playing Tracks in a Desired Order (program play)" on page 35 to program the tracks you want to record for side A. Make sure the total playing time for side A does not exceed the length of one side of the tape.

3 Click PAUSE.



The total playing time returns to "0.00."



4 Program the tracks you want to record for side B the same way you programed side A.

5 Click SUB to return to the SUB menu.

6 Click REC EDIT.
The program length for side B remains displayed.

7 Click ⇄ repeatedly to select how to record the tape.

To record	Click to display
One side of the tape	⇉
Both sides*	⇉ or ⇄

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

8 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high-frequency signals.

9 Click CD SYNCHRO.
"CD SYNC" appears and the CD player and tape deck enter recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

10 Click ❚❚, in the REC EDIT control panel, to release recording pause. Recording starts.

To stop recording
Click ■ in the REC EDIT control panel.

To cancel the CD program play mode before starting to record (in step 10)
Click PROGRAM repeatedly to select "CONTINUE".
The program play mode cannot be cancelled during synchro recording.

To erase the program contents
1 Click ■ to stop playback.
2 Click RESET in the PROGRAM EDIT menu.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Recording From the Radio

You can record from the tuner onto a tape. Use TYPE I (normal) or TYPE II (CrO2) tapes for recording.

1 Press EJECT ⏏ on the right speaker and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

2 Click FUNCTION in the main menu.

3 Click TUNER.

4 Tune in the radio station you want to record. See "Listening to the Radio" for details.

5 Click SUB.

6 Click REC EDIT.

7 Click ⊂⊃ repeatedly to select how to record the tape.

To record	Click to display
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

8 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high- frequency signals.

9 Click REC.
"REC" appears and the tape deck enters recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

10 Click ❚❚, in the REC EDIT control panel, to release recording pause. Recording starts.
You can also start recording by clicking ► or ◄.

To stop recording
Click ■ in the REC EDIT control panel.

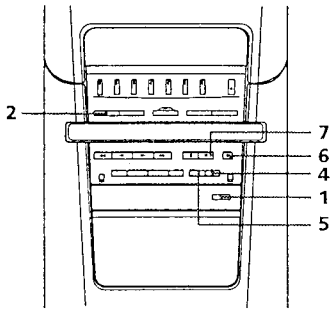
To insert a blank space
See "Inserting a Blank Space During Recording (rec mute)" on page 56.

To return to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Recording from the radio using the controls on the speaker



1 Press EJECT ⏏ and insert a blank tape into the tape deck, with the side you want to record facing forward. Make sure the tabs on the cassette have not been removed.

2 Press FUNCTION repeatedly to select TUNER.

3 Tune in the radio station you want to record. See "Listening to the Radio" for details.

4 Press DIRECTION repeatedly to select how to record the tape.

To record	Select
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

(continued)

5 Press DOLBY NR repeatedly to select DOLBY NR B or C when you want to reduce tape hiss in low-level, high- frequency signals.

6 Press REC.
The ● (REC) and ❚❚ (pause) indicators light up and the deck stands by for recording.
The direction indicators (◄ or ►) light to indicate which sides of the cassette you can use to record.
(For a full explanation of the ◄ and ► indicators, see "What the ◄ and ► indicators indicate" on page 50.)

If you want to record on the reverse side only
Press ◄ so the ◄ indicator lights steadily.

7 Press ❚❚, to release the record pause and start recording.

To stop recording
Press STOP ■.

To insert a blank space
See "Inserting a blank space during recording using the controls on the speaker" on page 57.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

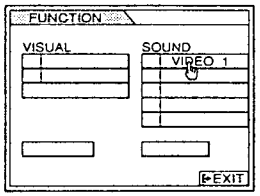
Recording From Other Components

You can record the audio signals from components connected to the VIDEO 1 and VIDEO 2 IN jacks onto a tape. Use TYPE I (normal) or TYPE II (CrO2) tapes for recording.

1 Press EJECT ⏏ on the right speaker and insert a blank tape into the tape deck, with the side you want to record facing forward.
Make sure the tabs on the cassette have not been removed.

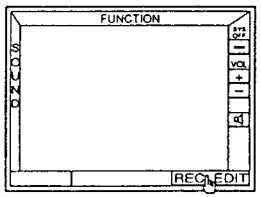
2 Click FUNCTION in the main menu.

3 Click VIDEO 1 or VIDEO 2 to select the component you want to record.

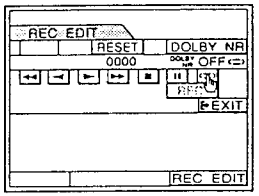


4 Prepare the source to play the program you desire. See the operating instructions supplied with the respective equipment for details.

5 Click REC EDIT.



6 Click ⊂⊃ repeatedly to select how to record the tape.



To record	Click to display
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

7 Click DOLBY NR to select "DOLBY NR: B" or "DOLBY NR: C" when you want to reduce tape hiss in low-level, high- frequency signals.

8 Click REC.
"REC" appears and the tape deck enters recording pause mode. The direction indicator in the REC EDIT control panel (►) indicates the direction in which recording will start.

If you want to record on the reverse side only
Click ◄ so that ◄ appears.

9 Click ❚❚, in the REC EDIT control panel, to release recording pause. Recording starts.
You can also start recording by clicking ► or ◄.

10 Start playing the program source. See the operating instructions supplied with the respective equipment for details.

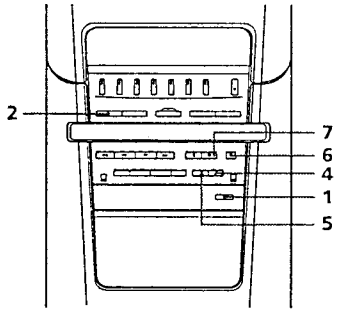
To stop recording
Click ■ in the REC EDIT control panel.

To insert a blank space
See "Inserting a Blank Space During Recording (rec mute)" on page 56.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Recording from other components using the controls on the speaker



1 Press EJECT ≙ and insert a blank tape into the tape deck, with the side you want to record facing forward. Make sure the tabs on the cassette have not been removed.

2 Press FUNCTION repeatedly to select VIDEO 1 or VIDEO 2.

3 Prepare the source to play the program you desire. See the operating instructions supplied with the respective equipment for details.

4 Press DIRECTION repeatedly to select how to record the tape.

To record	Select
One side of the tape	═
Both sides*	⊃ or ⊂⊃

* Recording always stops at the end of the reverse side. Be sure to start from the front side.

5 Press DOLBY NR repeatedly to select DOLBY NR B or C when you want to reduce tape hiss in low-level, high- frequency signals.

(continued)

6 Press REC.
The ● (REC) and ❚❚ (pause) indicators light up and the deck stands by for recording.
The direction indicators (◄ or ►) light to indicate which sides of the cassette you can use to record.
(For a full explanation of the ◄ and ► indicators, see "What the ◄ and ► indicators indicate" on page 50.)

If you want to record on the reverse side only
Press ◄ so the ◄ indicator lights steadily.

7 Press ❚❚, to release the record pause and start recording.

8 Start playing the program source. See the operating instructions supplied with the respective equipment for details.

To stop recording
Press STOP ■.

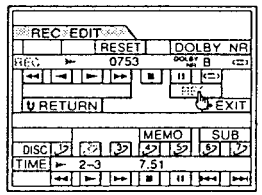
To insert a blank space
See "Inserting a blank space during recording using the controls on the speaker" on page 57.

Note
Adjusting the volume will not effect the recording level. But this will change the sound levels you hear through the speakers or headphones.

Inserting a Blank Space During Recording (rec mute)

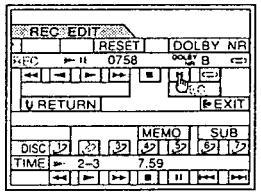
You can insert a blank space of four seconds between each track. The blank spaces between tracks let you locate the track easily with the AMS function (see pages 21 and 46). You can also use this function to eliminate any unwanted portions on the tape.

1 While recording, click REC at the position where you want to insert the blank space.



"REC" flashes and the tape runs without recording. After about four seconds, "REC", "►" and "❚❚" appear and the deck switches to recording pause mode.

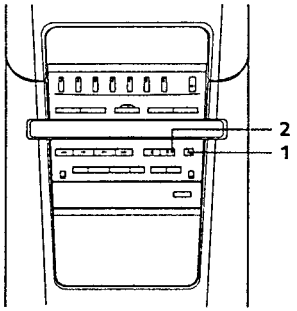
2 Click ❚❚ to resume recording.



To make a blank of more than four seconds
See the following section "Inserting a blank space during recording using the controls on the speaker".

To make a blank less than four seconds long.
Click ❚❚ while "REC" is flashing.

Inserting a blank space during recording using the controls on the speaker



1 While recording, press ● REC at the position where you want to insert the blank space.
The "●" indicator flashes and the tape runs without recording. After about four seconds, the "●" and "II" indicators light, and the deck switches to recording pause mode.

2 Press II PAUSE to resume recording.

To make a blank of more than 4 seconds
Press ● REC for as long as needed.
The ● REC indicator flashes faster after four seconds have elapsed. The tape pauses when you release ● REC.

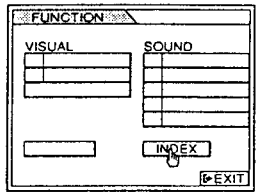
To make a blank less than four seconds long
Press II PAUSE while the ● REC indicator is flashing.

Customizing the function menu

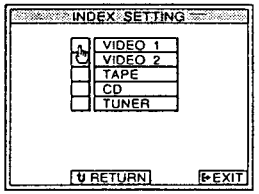
You customize the function menu by specifying icons and names up to 9 characters long for each function button.

1 Click FUNCTION in the main menu.

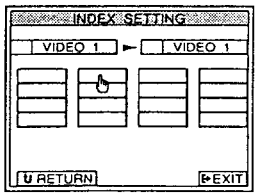
2 Click INDEX.
The INDEX SETTING screen appears.



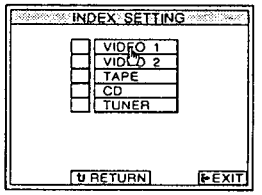
3 Click the icon to be changed.



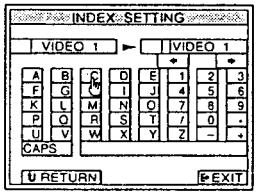
4 Click the icon you desire from the icon menu, then click RETURN.



5 Click the function button to be changed.



6 Spell out the new name by clicking each character in order. The name is stored automatically.



To enter a space
Click the space bar.

To switch between upper and lower case letters
Click CAPS.

If you make a mistake
Click ← or → to move the cursor to the character to be changed, then click the correct character (or click the space bar to erase the character).

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

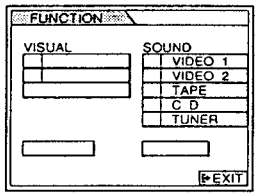
To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Enjoying Two Sources at the Same Time

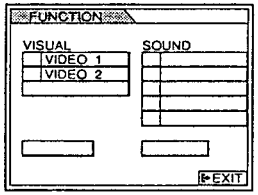
Use the procedure below to play two program sources at the same time (for example, to play a laser disc while listening to a compact disc).

1 Click FUNCTION in the main menu.
The FUNCTION SELECT menu appears.

2 Click the SOUND source you desire.



3 Click FUNCTION again, then click the VISUAL source you desire.



4 Start playing the SOUND source.

If you selected TAPE or CD
Click ► in the on screen control panel.

If you selected VIDEO 1 or 2
See the operating instructions supplied with the respective equipment for details.

5 Start playing the VISUAL program source.
See the operating instructions supplied with the respective equipment for details.

To stop playing the SOUND source
For TAPE or CD, Click ■ in the on screen control panel.
For VIDEO 1 or 2, see the operating instructions supplied with the respective equipment for details.

To stop playing the VISUAL source
See the operating instructions supplied with the respective equipment for details.

To deselect the video signal from the VISUAL source when listening a SOUND source
1 Click FUNCTION.
2 Click VISUAL OFF.
The video signal from the VISUAL source goes out.
To turn off the VISUAL source, see the operating instructions supplied with the respective equipment.

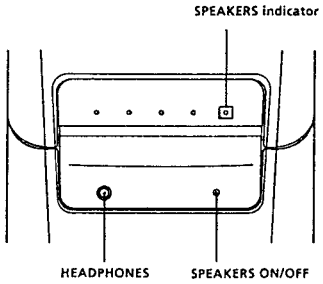
Listening With Headphones

You can connect a pair of headphones to the HEADPHONES jack on the left speaker.

1 Connecting the headphones to the HEADPHONES jack.

2 Press SPEAKERS ON/OFF to turn the speakers off.
The SPEAKERS indicator goes out.

3 Adjust the volume to the level you desire.



When you are finished listening with headphones
To avoid damaging the speakers, turn the volume down before turning the speakers back on.

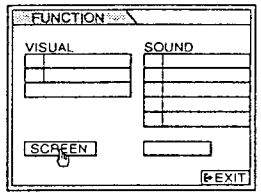
Additional Features

Adjusting the Position of the On-Screen Display

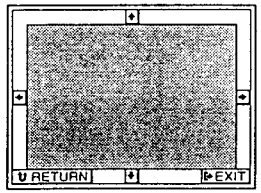
You can make fine adjustments to the overall position of the on-screen display control panel.

1 Click FUNCTION in the main menu.

2 Click SCREEN.



The position adjustment screen appears.



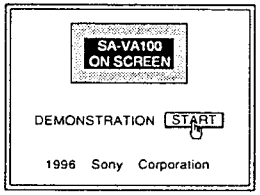
Click the ↑, →, ↓, or ← icons in the border to adjust the position so you can just see the top, bottom, right and left edges of the graphic.

To go back to the previous menu
Click RETURN or press RETURN on the remote control.

To exit to the main menu.
Click EXIT or press EXIT on the remote control.

Using the Demonstration Mode

When you first turn on the system a demonstration START icon appears in the display.



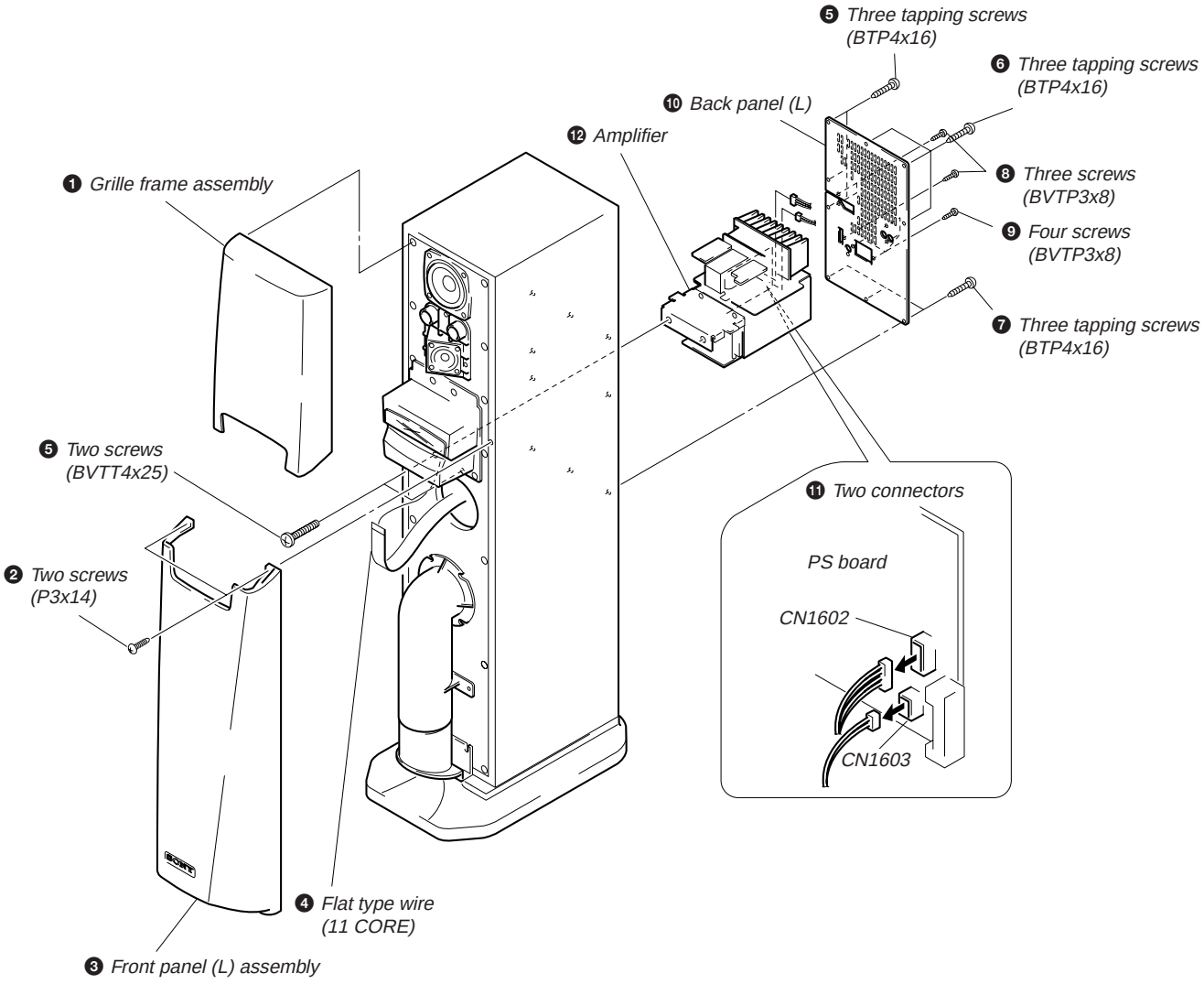
Clicking START activates a program that explains the various functions of the system.

To stop the program
Press one of the following buttons on the remote:
- ENTER
- ▲/▼/◄/►
- RETURN
- EXIT
- OSD ON/OFF

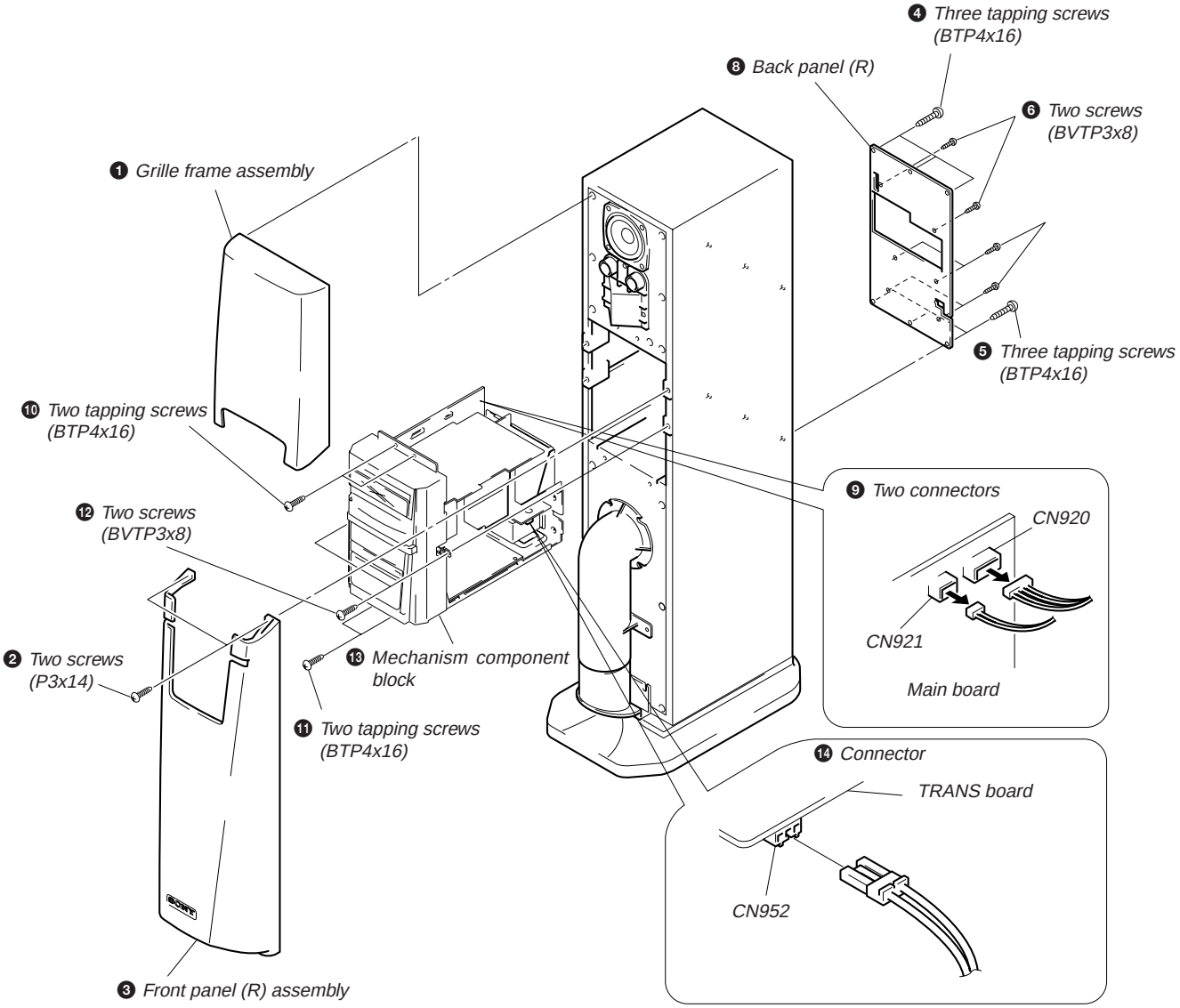
When the demo is stopped, the main menu corresponding to the current system function is displayed. Pressing OSD ON/OFF, however, stops the demo and turns off the on-screen display.

SECTION 3
DISASSEMBLY

3-1. AMPLIFIER BLOCK

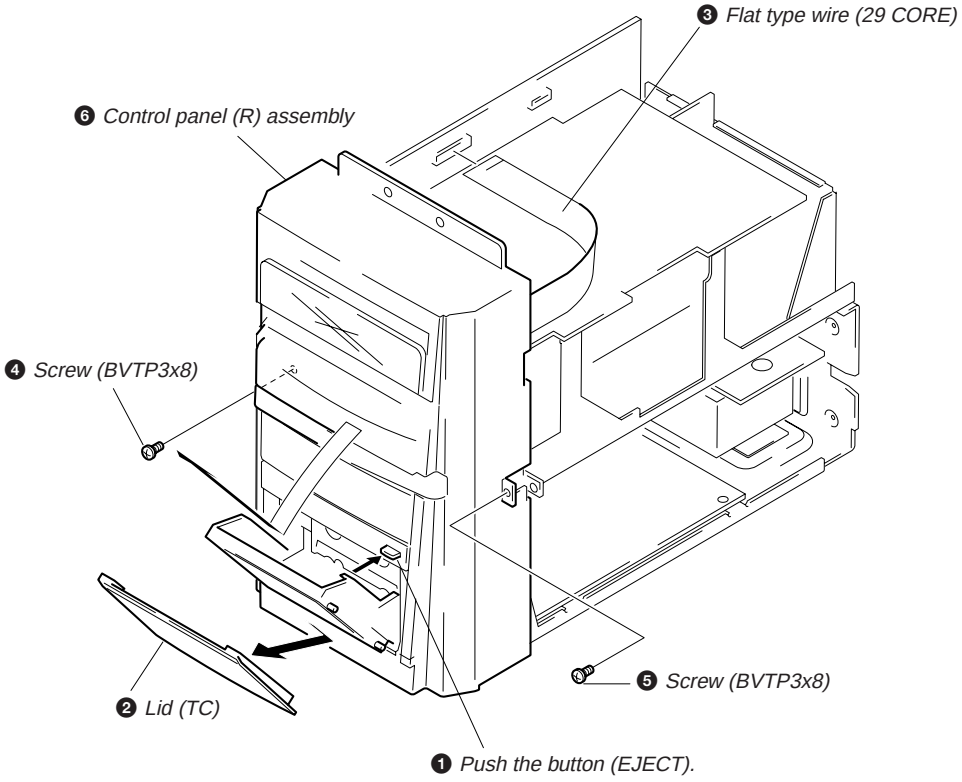


3-2. MECHANISM COMPONENT BLOCK

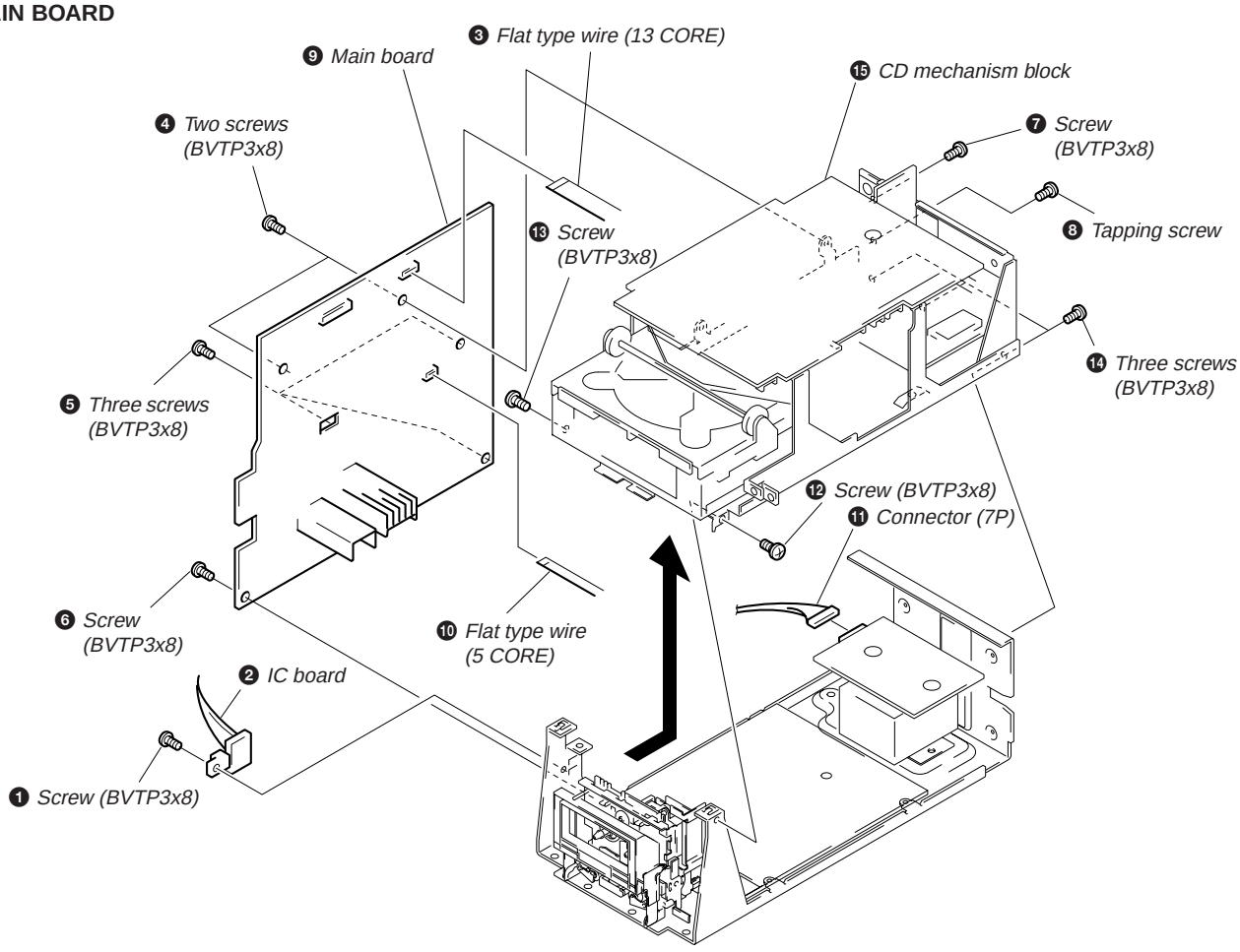


3-3. CD MECHANISM AND TC MECHANISM BLOCK

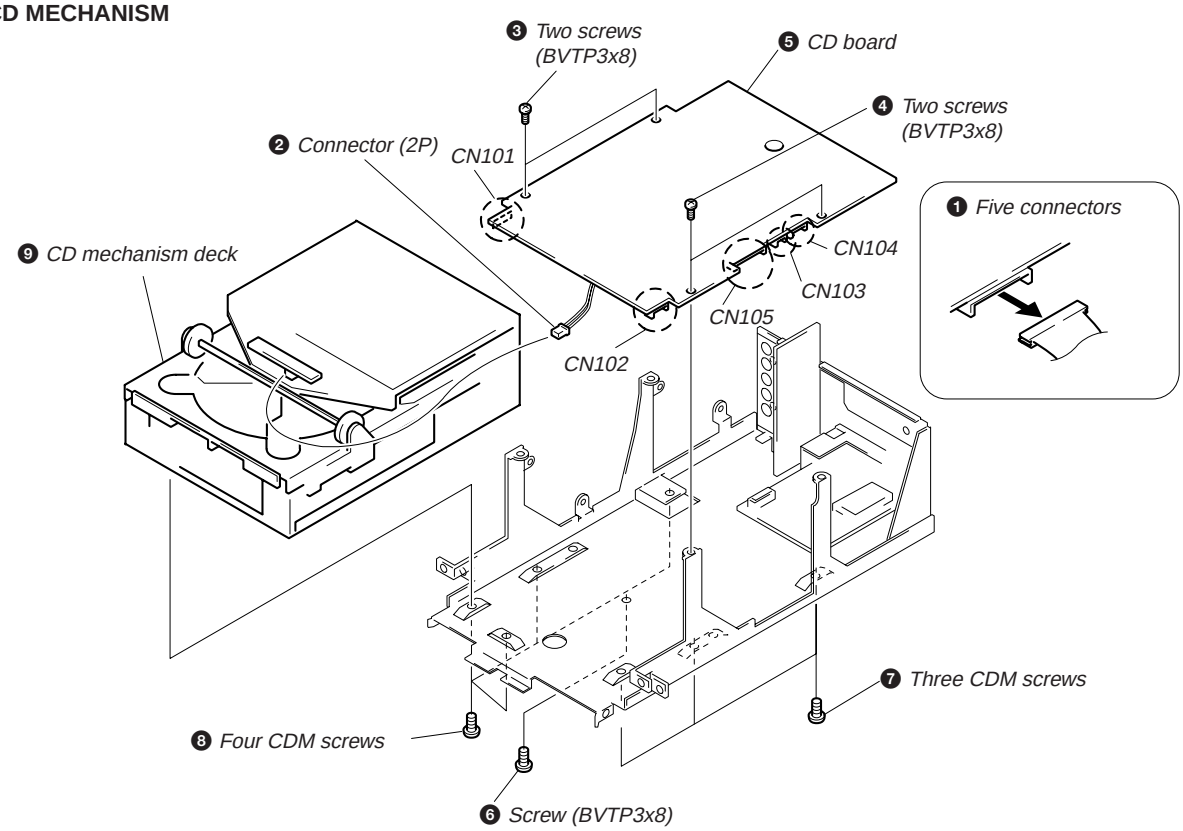
1. Lid (TC)



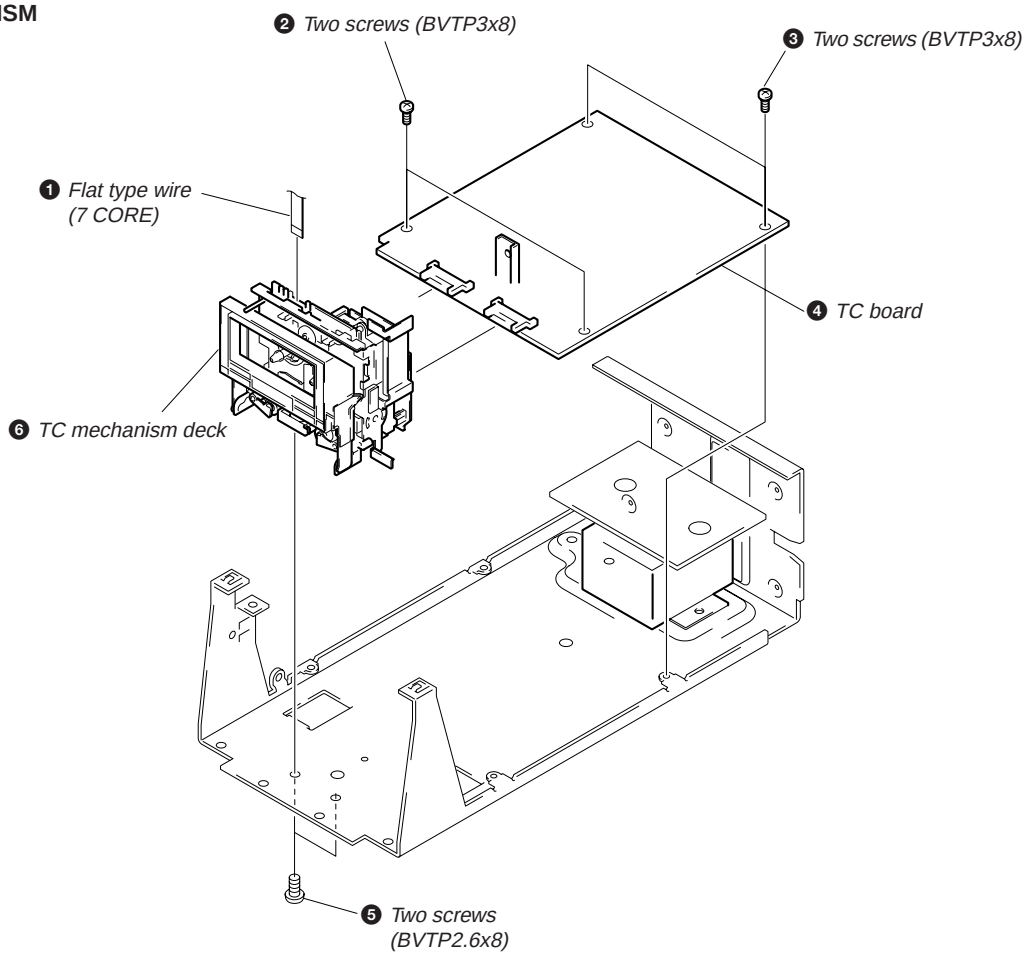
2. MAIN BOARD



3. CD MECHANISM



4. TC MECHANISM



SECTION 4
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30 to 60 g • cm (0.42 - 0.83 oz • inch)
FWD back tension	CQ-102C	1 to 5 g • cm (0.014 - 0.069 oz • inch)
REV	CQ-102RC	30 to 60 g • cm (0.42 - 0.83 oz • inch)
REV back tension	CQ-102RC	1 to 5 g • cm (0.014 - 0.069 oz • inch)
FF/REW	CQ-201B	65 to 90 g • cm (0.91 - 1.25 oz • inch)
FWD tension	CQ-403A	110 g or more (3.88 oz or more)
REV tension	CQ-403R	110 g or more (3.88 oz or more)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION **0 dB=0.775V**

1. Demagnetize the record/playback head with a head damagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.
   DOLBY NR switch: OFF
   DIRECTION switch: ⇆
   FUNCTION switch: TAPE

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Test Mode

Perform the tape deck adjustment after setting the test mode.
◀◀ The sections where recording is started are memorized. When the 0 button is pressed after recording, the tape is rewound to the section where recording was started, and stops.

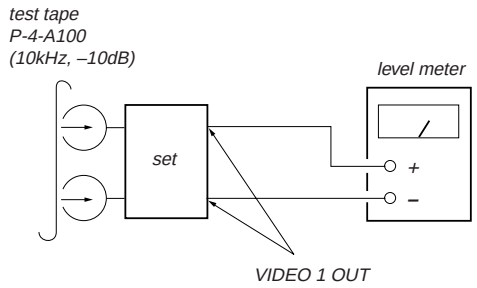
In this mode, the input source can be selected using the FUNCTION button. To playback the recorded tape, select the TAPE using the FUNCTION button.
To play back the tape, select TAPE using the FUNCTION button.
To exit the mode disconnect the AC plug from the outlet.

Method:
In the STANDBY state, press the DOLBY NR button, ■ button, and DISC 4 button together.

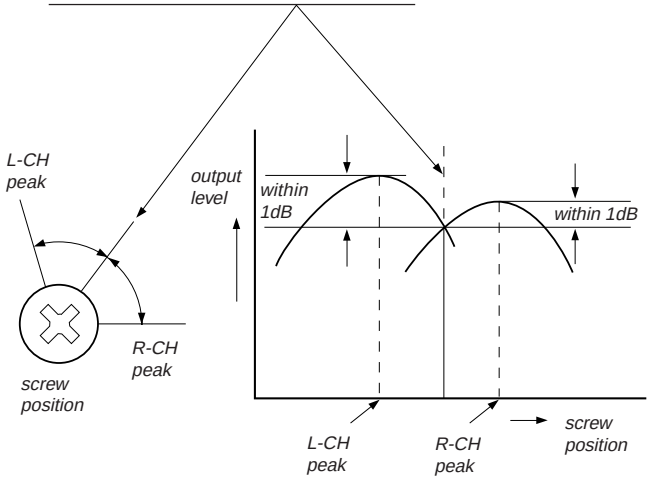
Record/Playback Head Azimuth Adjustment

Note: Perform this adjustments for both decks.

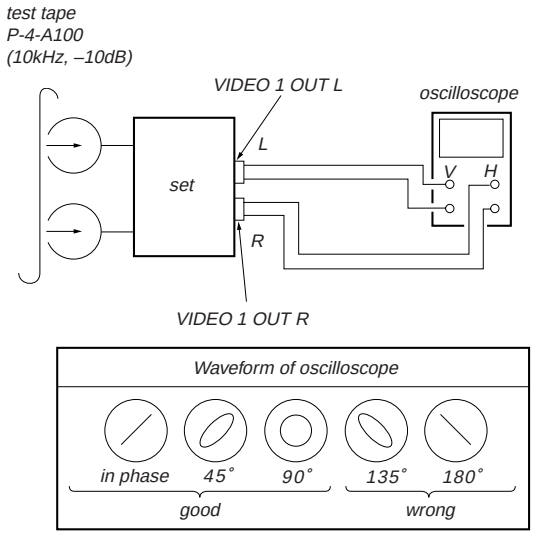
Procedure:
1. Mode : Playback



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.

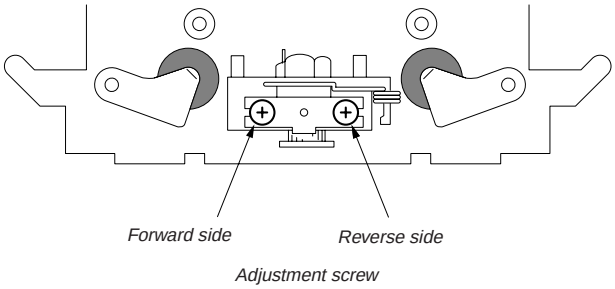


3. Mode: Playback



4. Change the reverse playback mode and repeat the steps 1 to 3.
5. After the adjustments, apply suitable locking compound to the parts adjusted.

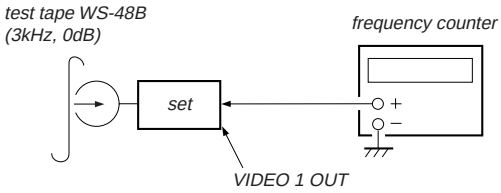
Adjustment Location: Record/Playback/Erase Head



Note: When adjusting the azimuth, remove the Lid (TC) from the control panel assembly in advance.

Tape Speed Adjustment

Procedure :
Mode: Playback

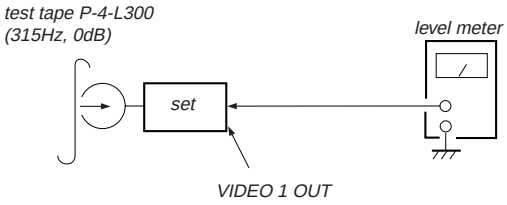


1. Set to the playback mode.
2. Adjust the RV71 on the AUDIO board so that the frequency counter reading becomes 3,000 ± 10 Hz.

Adjustment Location: AUDIO board

Playback Level Adjustment

Procedure:
Mode: Playback



Adjust the RV11 (L-CH) and RV21 (R-CH) to satisfy the following adjustment level.

Adjustment level:

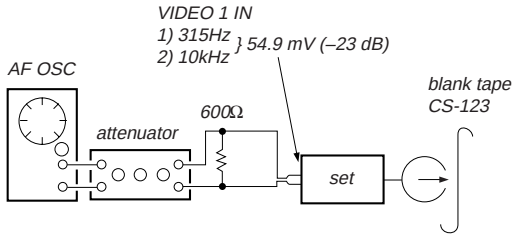
VIDEO 1 OUT level: 294.6 to 330.6 mV (–8.4 to –7.4 dB)
level difference between the channels: within ± 0.5 dB
Confirm that the VIDEO 1 OUT Level does not change when playback and stop are repeated.

Adjustment Location: AUDIO board

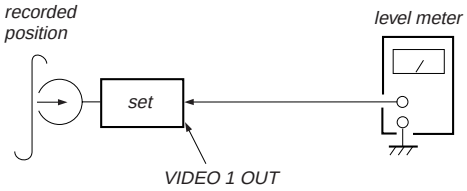
Record Bias Adjustment

Procedure:

1. Mode: record



2. Mode: Playback



3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
   If these levels do not adjustment level, adjust the RV12 (L-CH) and RV22 (R-CH) on the AUDIO board to repeat steps 1 and 2.

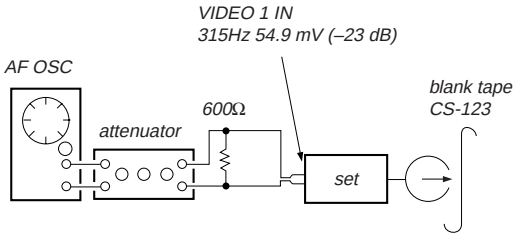
Adjustment level: The playback output of 10 kHz level difference against 315 Hz reference should be ± 0.5 dB.

Adjustment Location: AUDIO board

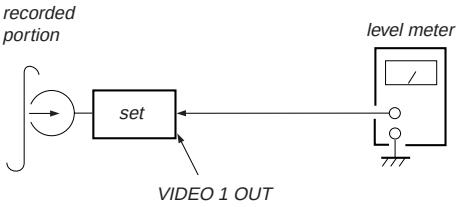
Record Level Adjustment

Procedure:

1. Mode: record



2. Mode: Playback



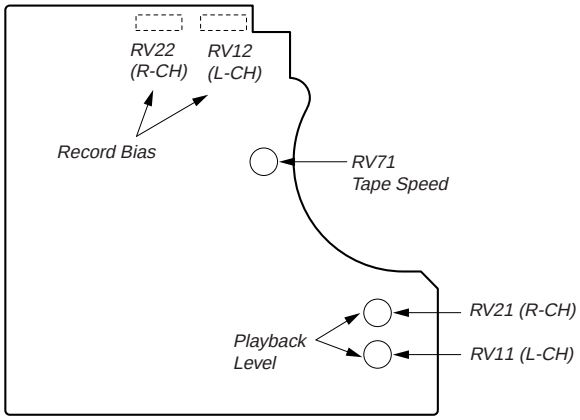
3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
   If these levels do not adjustment level, adjust the RV203 (L-CH) and RV204 (R-CH) on the TC board to repeat steps 1 and 2.

Adjustment level:
VIDEO 1 OUT level: 46.2 to 51.8 mV (–24.5 to –23.5 dB)

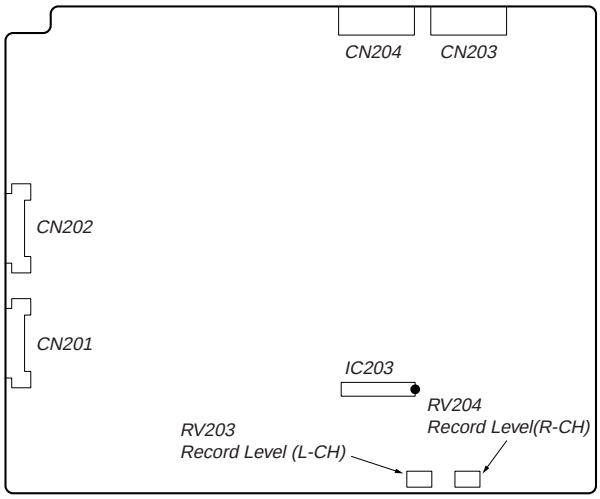
Adjustment Location: TC board

Adjustment Location

[AUDIO BOARD] (Conductor Side)



[TC BOARD] (Component Side)

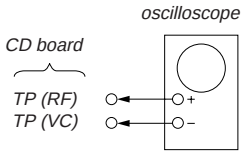


CD SECTION

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10M impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

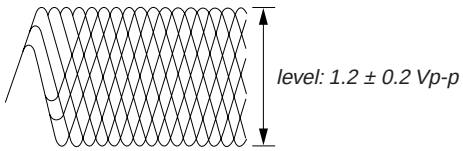
Focus Bias Adjustment



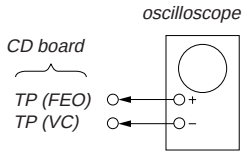
Procedure:

1. Connect oscilloscope to test point TP (RF). on CD board.
2. Turned SYSTEM POWER switch on.
3. Put disc (YEDS-18) in to playback the number two track.
4. Adjust RV101 so that the waveform is clear.
   (Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

• *RF signal*
VOLT/DIV: 200 mV
TIME/DIV: 500 nS

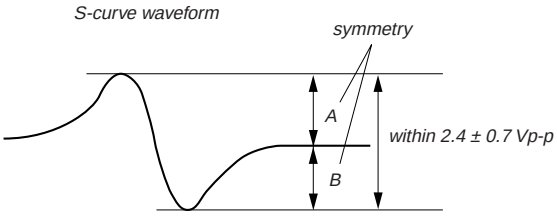


S Curve Check



Procedure :

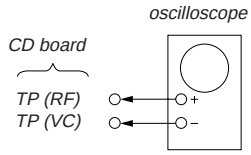
1. Load CDs into the each tray (seven pieces).
2. Connect oscilloscope to test point TP (FEO).
3. Connect between test point TP (FOK) and Ground by lead wire.
4. The focus search is performed by turning ON the SYSTEM POWER.
   It searches DISC 1-7 in order and stops.
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.



6. After check, remove the lead wire connected in step 3.

Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

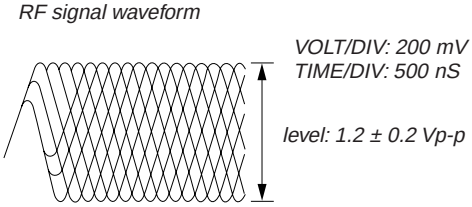
RF Level Check



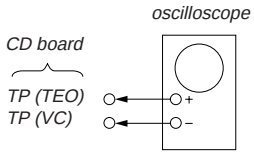
Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned SYSTEM POWER switch on.
3. Put disc (YEDS-18) in to playback the number two track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.



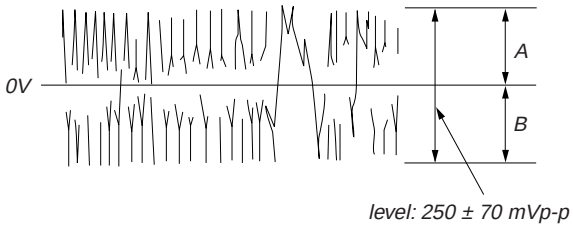
E-F Balance Check



Procedure:

1. Set the DISC (YEDS-18) in chucking mode.
2. Connect the test point TP (ADJ) of CD board and the ground.
3. Connect oscilloscope to test point TP (TEO).
4. Press DOLBY NR button, ■ button and DISC 1 button at the same time in the STANDBY mode.
5. Playback the disc and press the DISC 4 button. (Tracking /sled OFF)
6. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

Traverse waveform



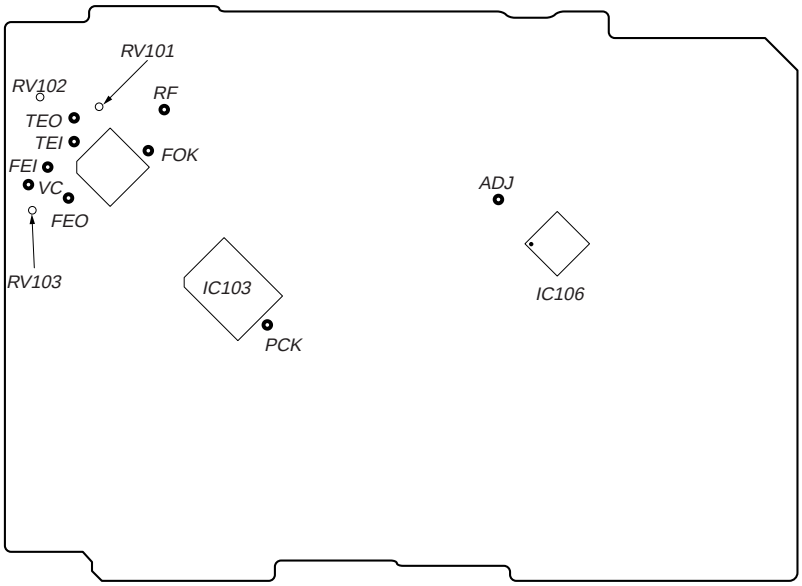
Specified level: • $\frac{A - B}{2 (A + B)}$ x 100 = less than ± 7%

• A + B = 250 ± 70 mVp-p

7. Turn the power supply OFF, and remove the read wire connected in step 2.

Adjustment Location:

[CD BOARD] (Conductor Side)



Focus/Tracking Gain Adjustment (RV102, RV103)

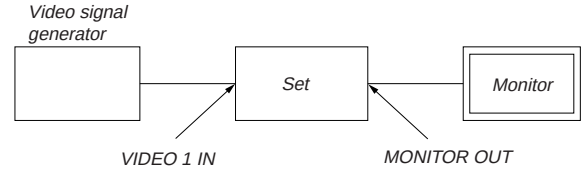
This gain has a margin, so even if it is slightly off.
There is no problem.
Therfore, do not perform this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

OSD SECTION

OSD Width Adjustment

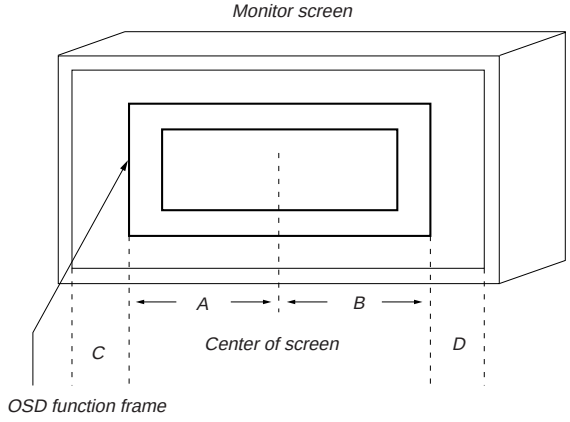
Note: Perform "cold reset" before this adjustment.
(Refer to SERVICING NOTE on page 4)

Connection:



Method:

1. Connect the video signal generator to the VIDEO 1 IN jack and output the cross hatch signal.
2. Turn ON the power, press the FUNCTION button, and set the input source to VIDEO 1.
3. Taking the center of the monitor screen as center, and adjust CT601 of the MAIN board so that the distances A and B (to the edges of the function frame) become equal.
4. If the OSD function frame screen disappears during the adjustment, move the cursor of the remote commander provided. As a result, the OSD screen will appear again.

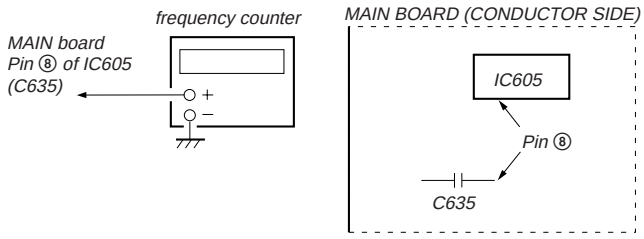


Adjustment specification:A=B

The cross hatch signal is input with the video signal generator so that the center of the screen can be identified easily. If there is no device to output the cross hatch signal, other video signals such as the color bar signal can be used if these enable the center to be identified easily.
If these signals are not available, adjust so that the distances C and D (from the edge of the OSD function frame to edge of the monitor screen) become equal.

OSD Color Adjustment

Connection:



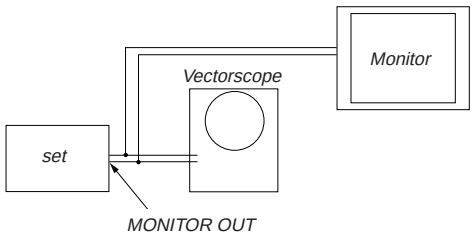
Method:

1. Without anything connected to the external input terminal, press the SYSTEM POWER button and turn ON the power.
2. Adjust CT602 of the MAIN board so that the reading on the frequency counter becomes 14.31818 MHz ± 180 MHz.

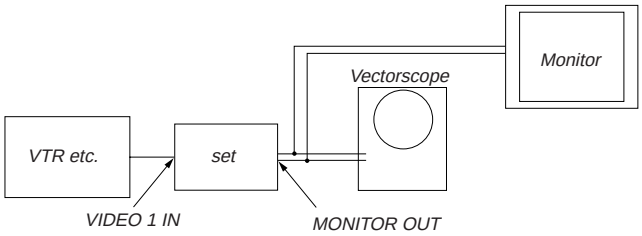
OSD Color Burst Adjustment

Connection:

Connection 1:



Connection 2:

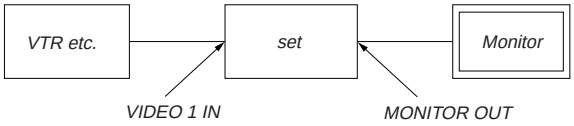


Method 1:

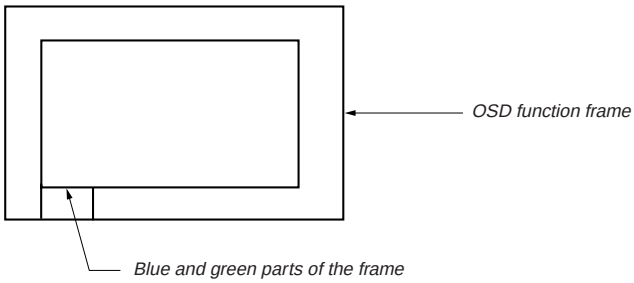
1. Without anything connected to the external input terminal (connection 1), press the SYSTEM POWER button and turn ON the power.
2. Check that the OSD function frame screen is displayed on the monitor. If no OSD function frame screen is displayed, move the cursor button of the remote commander provided to display the screen.
3. Observe the vectorscope, and adjust RV601 of the MAIN board so that the light dots converge in the BLUE area.
4. Connect a dynamic picture video device to the external input terminal (VIDEO 1 IN jack) of this unit (Connection 2).
5. Press the FUNCTION button and set the input source to VIDEO 1.
6. Move the cursor of the remote commander provided, and display the OSD function frame.
7. Observe the vectorscope. Check that the light dots in the BLUE range and the light dots adjusted at 3 are coinciding.
8. If they do not coincide, disconnect the external video device, and adjust RV601 of the MAIN board again.
9. If the light dots when an external video device is connected and not connected coincide, it indicates the end of the adjustment.

Method 2: (When no vectorscope is used)

Connection:

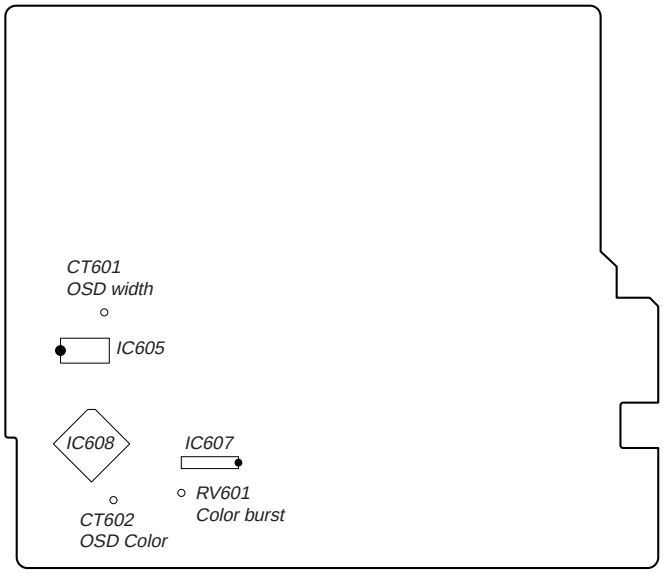


1. Connect a dynamic picture video device to the VIDEO 1 IN jack of the unit.
2. Press the FUNCTION button, and set the input source to VIDEO 1.
3. Move the cursor of the remote commander provided, and display the OSD function frame.
4. Take note of the blue and green screens at the bottom left of the OSD function frame.
5. Disconnect the video device connected at 1.
6. Adjust RV601 of the MAIN board so that the blue and green parts at the bottom left of the OSD function frame to the same color as the images checked at 4.



Note) Perform this adjustment when disconnecting the external video device. If the external video device is connected, there is no meaning in performing this adjustment due to the use of the color burst of the external device instead of the internal sync signal.

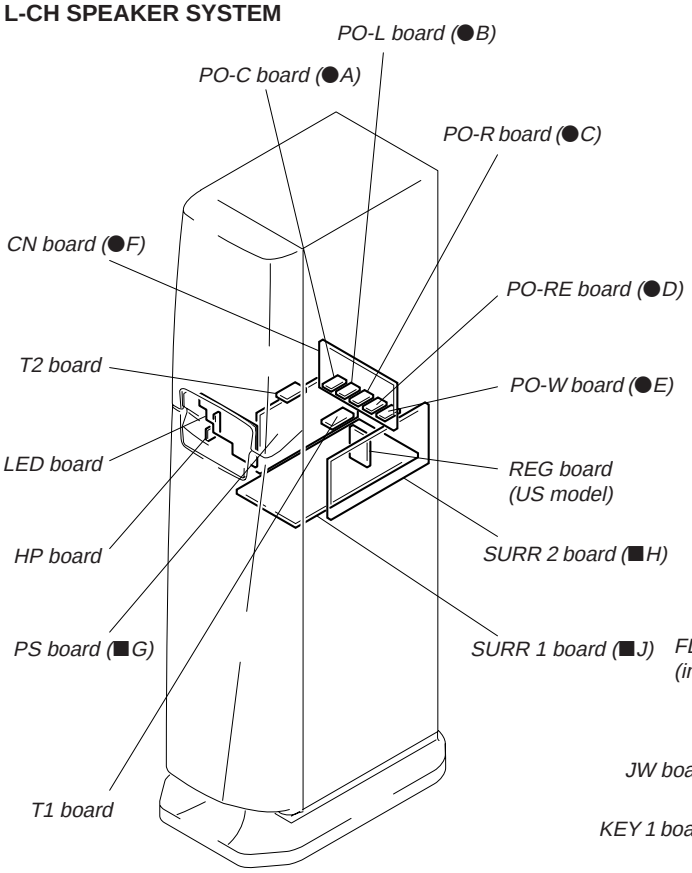
[MAIN BOARD] — Conductor Side —



SECTION 6
DIAGRAMS

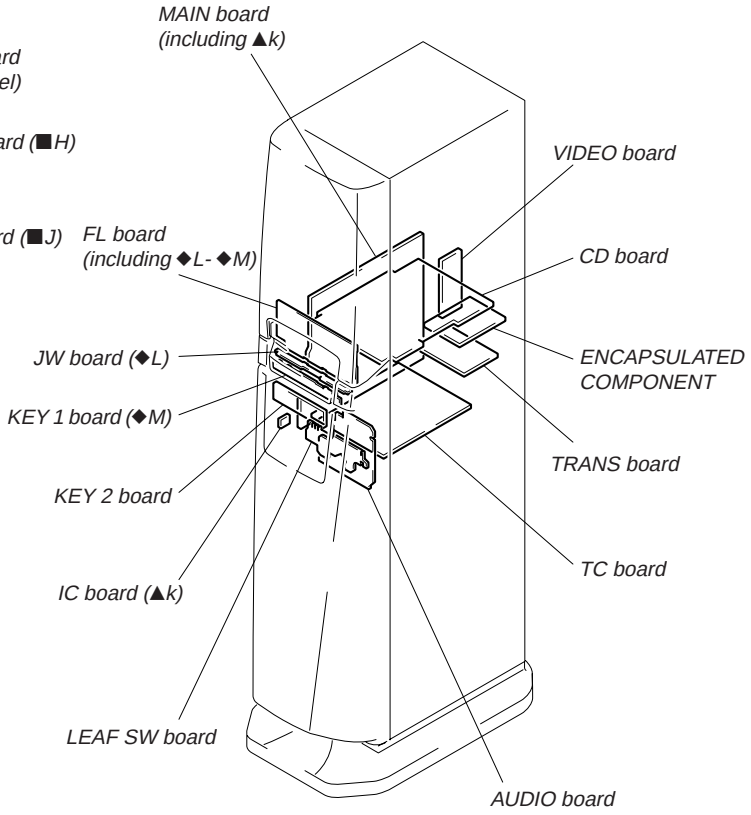
6-1. CIRCUIT BOARDS LOCATION

L-CH SPEAKER SYSTEM

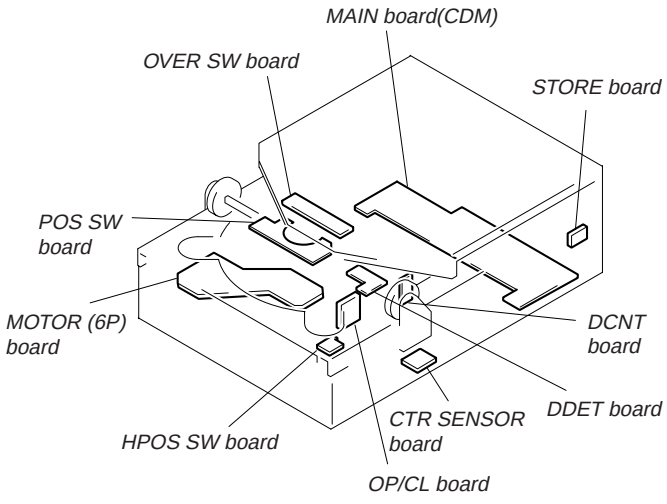


Note: POWER board (including ●A-●F)
SURR board (including ■G-■J)

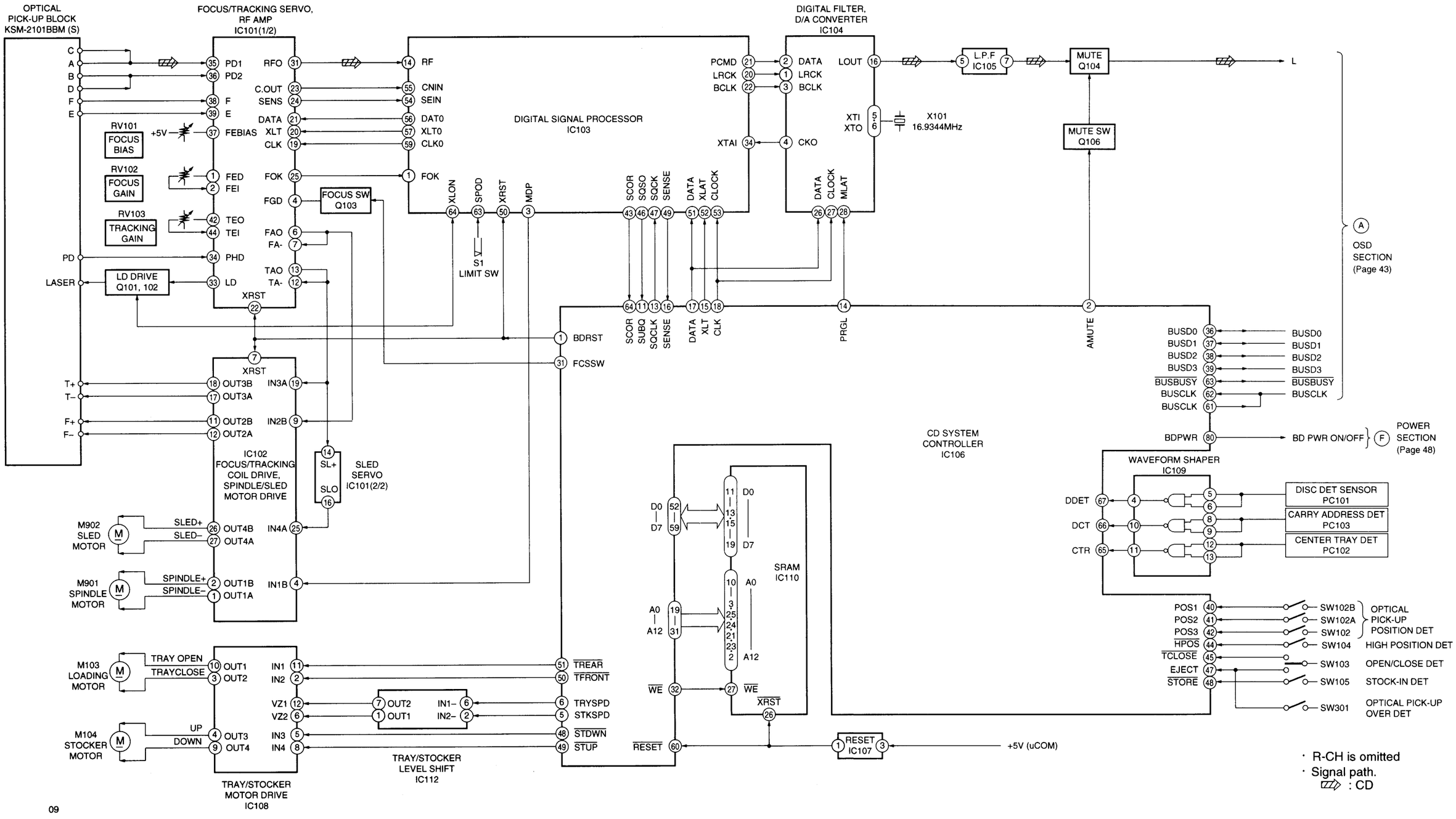
R-CH SPEAKER SYSTEM



CD MECHANISM

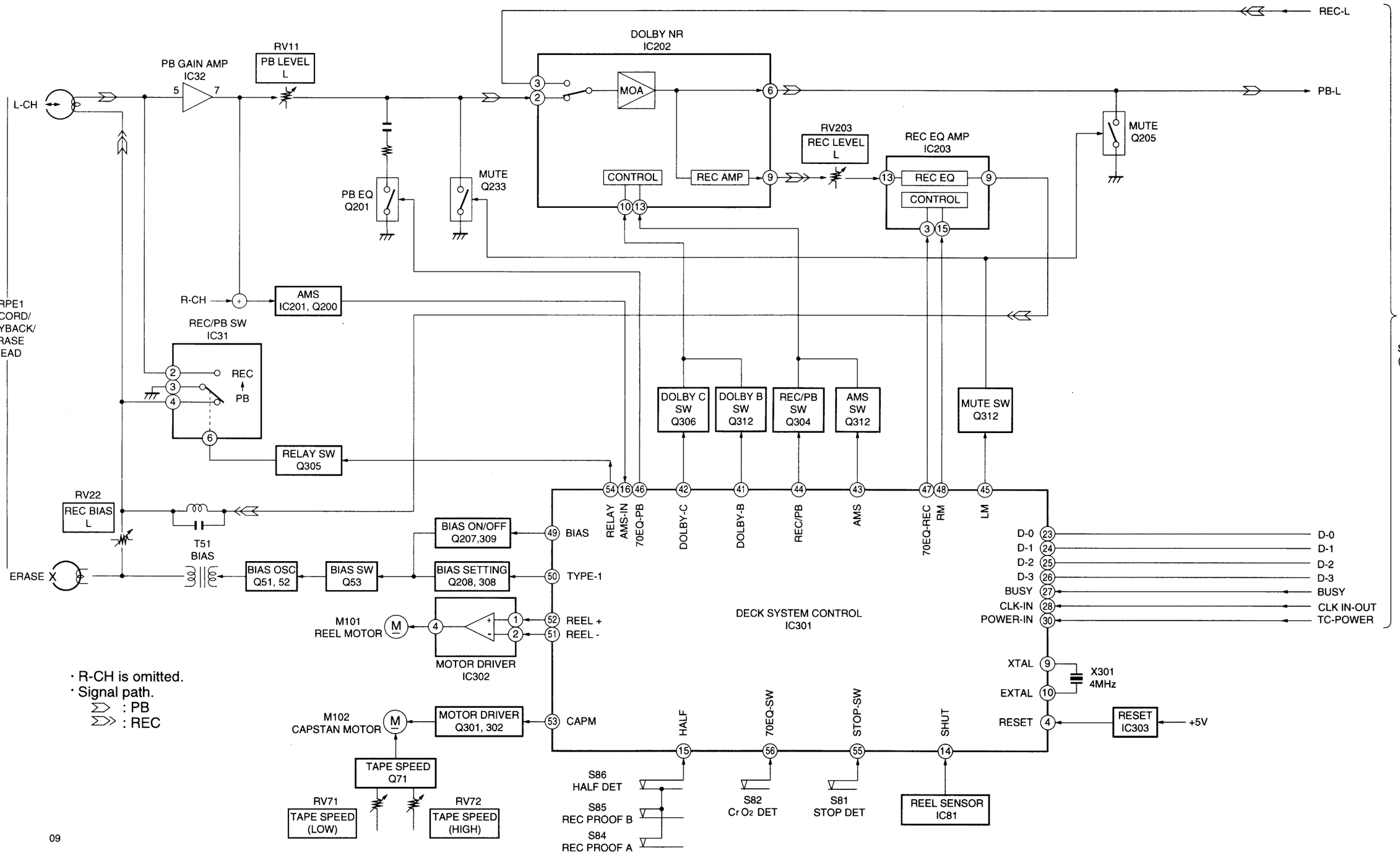


6-2. BLOCK DIAGRAMS
— CD SECTION —

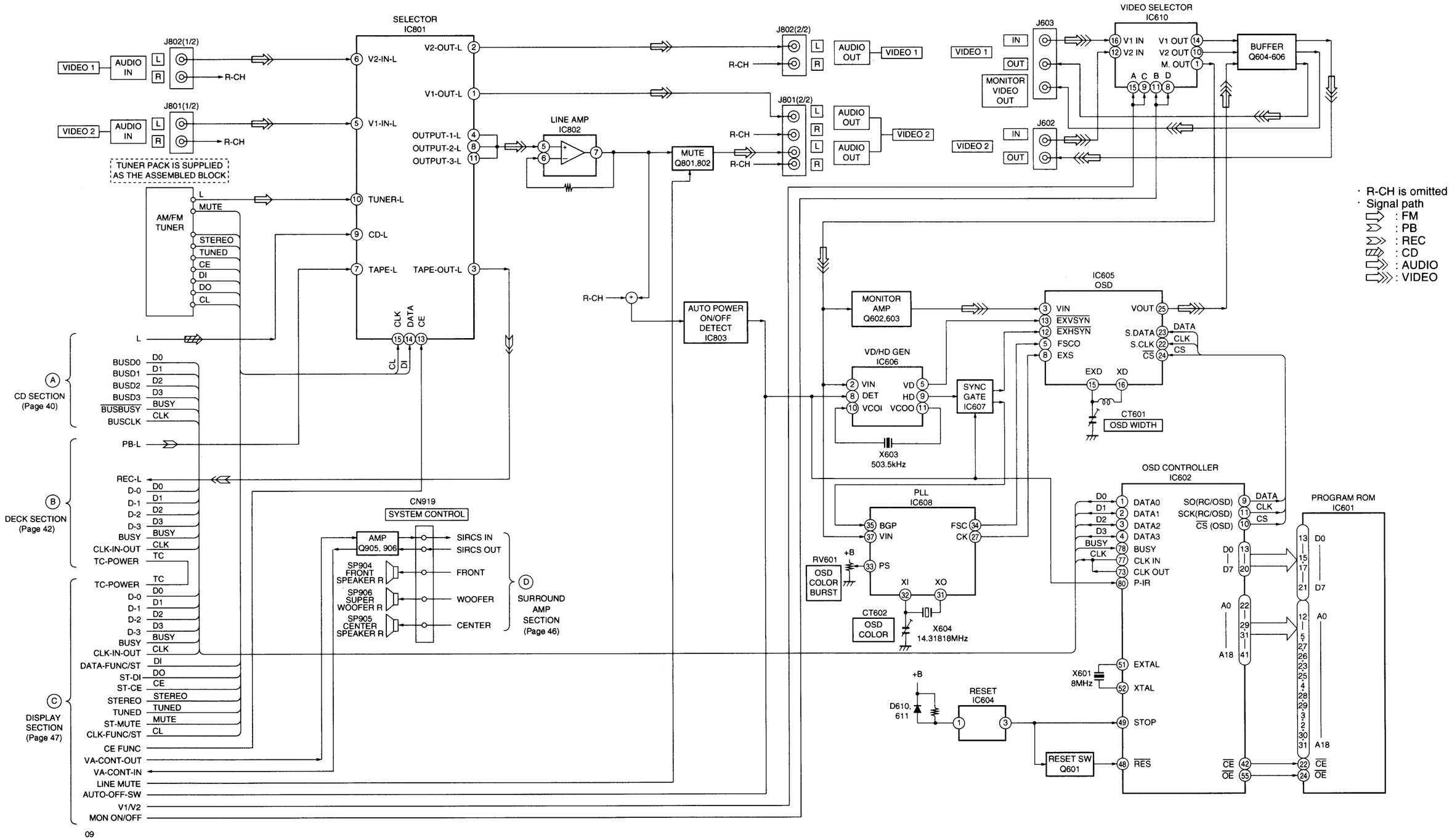


09

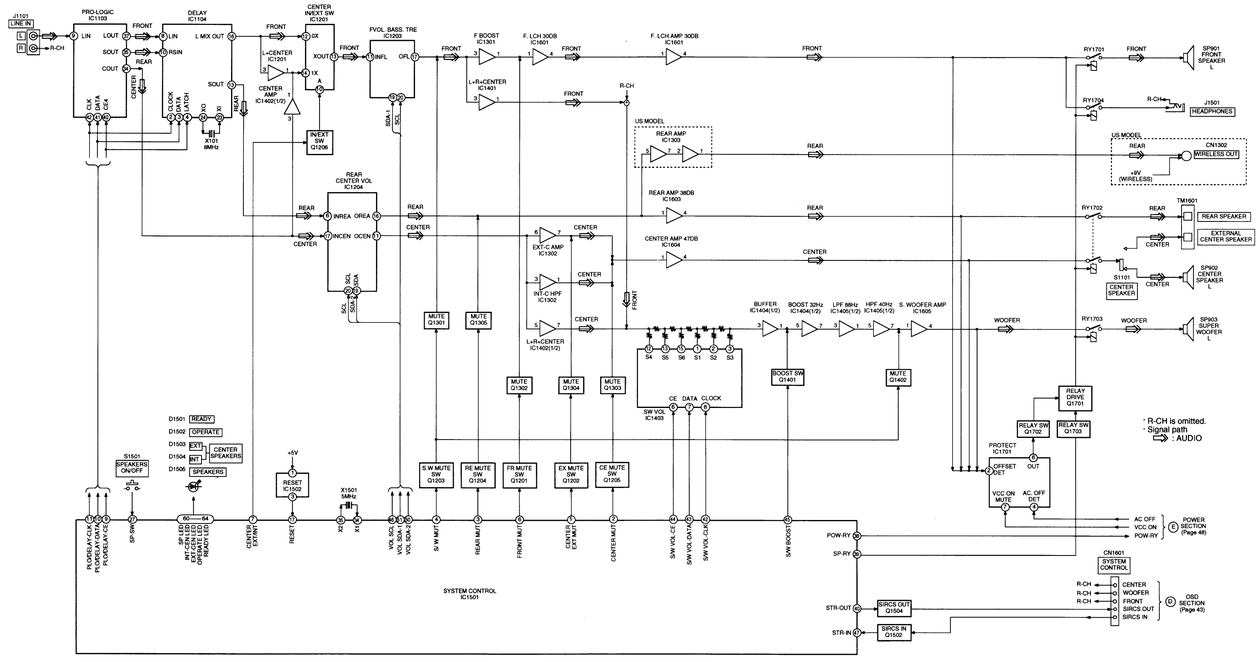
— DECK SECTION —



— OSD SECTION —

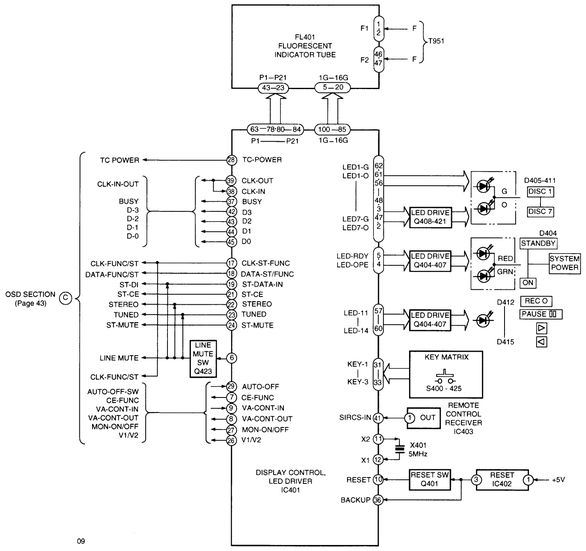

SELECTOR IC801
J802(1/2)
VIDEO 1
AUDIO IN
L
R
R-CH
J801(1/2)
VIDEO 2
TUNER PACK IS SUPPLIED AS THE ASSEMBLED BLOCK
AM/FM TUNER
L
MUTE
STEREO
TUNED
CE
DI
DO
CL
V2-IN-L
V1-IN-L
TUNER-L
CD-L
TAPE-L
V2-OUT-L
V1-OUT-L
OUTPUT-1-L
OUTPUT-2-L
OUTPUT-3-L
TAPE-OUT-L
CLK
DATA
CE
LINE AMP IC802
MUTE Q801,802
J802(2/2)
J801(2/2)
AUDIO OUT
VIDEO 1
VIDEO 2
R-CH
VIDEO SELECTOR IC610
J603
J602
IN
OUT
MONITOR VIDEO OUT
V1 IN
V2 IN
V1 OUT
V2 OUT
M. OUT
A C B D
BUFFER Q604-606
AUTO POWER ON/OFF DETECT IC803
MONITOR AMP Q602,603
IC605 OSD
VIN
EXVSYN
EXHSYN
FSCO
EXS
VOUT
S.DATA
S.CLK
CS
DATA
CLK
EXD
XD
CT601
OSD WIDTH
VD/HD GEN IC606
VIN
DET
VCOI
VD
HD
VCOO
SYNC GATE IC607
X603
503.5kHz
PLL IC608
BGP
VIN
FSC
CK
RV601
+B
OSD COLOR BURST
PS
XI
XO
CT602
OSD COLOR
X604
14.31818MHz
OSD CONTROLLER IC602
DATA0
DATA1
DATA2
DATA3
BUSY
CLK IN
CLK OUT
P-IR
SO(RC/OSD)
SCK(RC/OSD)
CS (OSD)
PROGRAM ROM IC601
D0
D7
A0
A18
EXTAL
XTAL
X601
8MHz
STOP
RESET IC604
D610, 611
RESET SW Q601
RES
CE
OE
A CD SECTION (Page 40)
BUSD0
BUSD1
BUSD2
BUSD3
BUSBUSY
BUSCLK
D0
D1
D2
D3
BUSY
CLK
PB-L
REC-L
B DECK SECTION (Page 42)
D-0
D-1
D-2
D-3
BUSY
CLK-IN-OUT
TC-POWER
TC
C DISPLAY SECTION (Page 47)
DATA-FUNC/ST
ST-DI
ST-CE
STEREO
TUNED
ST-MUTE
CLK-FUNC/ST
CE FUNC
VA-CONT-OUT
VA-CONT-IN
LINE MUTE
AUTO-OFF-SW
V1/V2
MON ON/OFF
CN919
SYSTEM CONTROL
AMP Q905, 906
SP904 FRONT SPEAKER R
SP906 SUPER WOOFER R
SP905 CENTER SPEAKER R
SIRCS IN
SIRCS OUT
FRONT
WOOFER
CENTER
D SURROUND AMP SECTION (Page 46)
· R-CH is omitted
· Signal path
: FM
: PB
: REC
: CD
: AUDIO
: VIDEO

— SURROUND AMP SECTION —



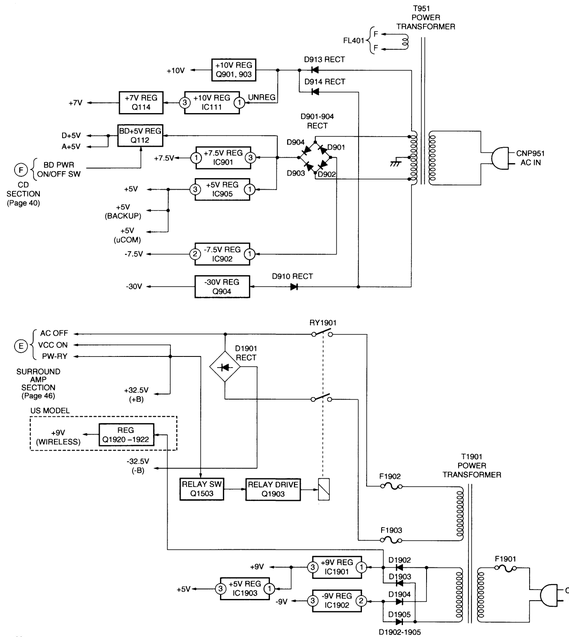
09

— DISPLAY SECTION —



09

— POWER SECTION —



09

6-3. PRINTED WIRING BOARD — CD SECTION —

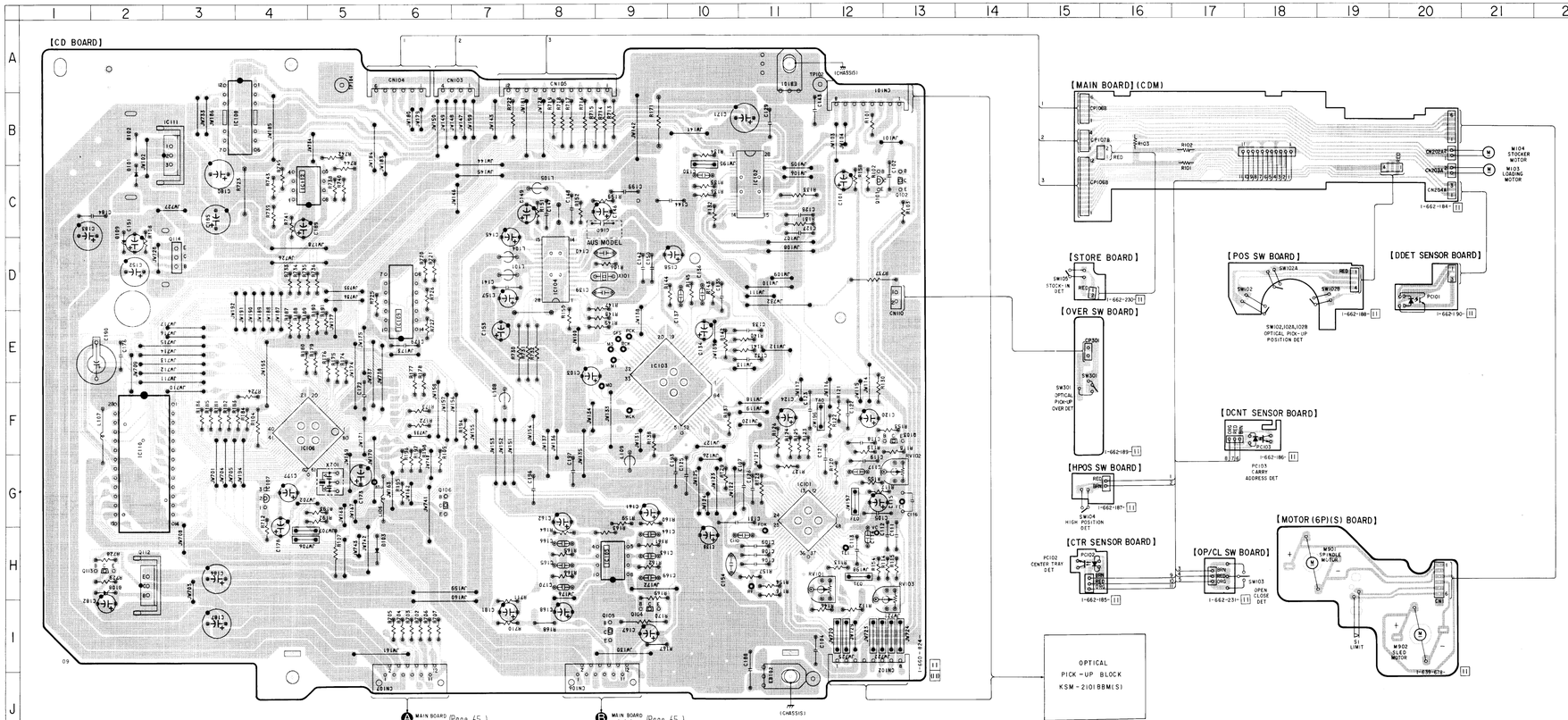
• See page 38 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D101	B-2
D103	H-5
D108	H-2
D109	C-2
IC101	G-11
IC102	C-11
IC103	E-9
IC104	D-8
IC105	H-9
IC106	F-4
IC107	G-4
IC108	B-3
IC109	E-6
IC110	F-2
IC111	B-3
IC112	C-4
PC101	D-20
PC102	H-15
PC103	F-18
Q101	C-12
Q102	C-13
Q103	F-13
Q104	I-9
Q105	I-9
Q106	G-6
Q112	H-2
Q113	H-1
Q114	D-3

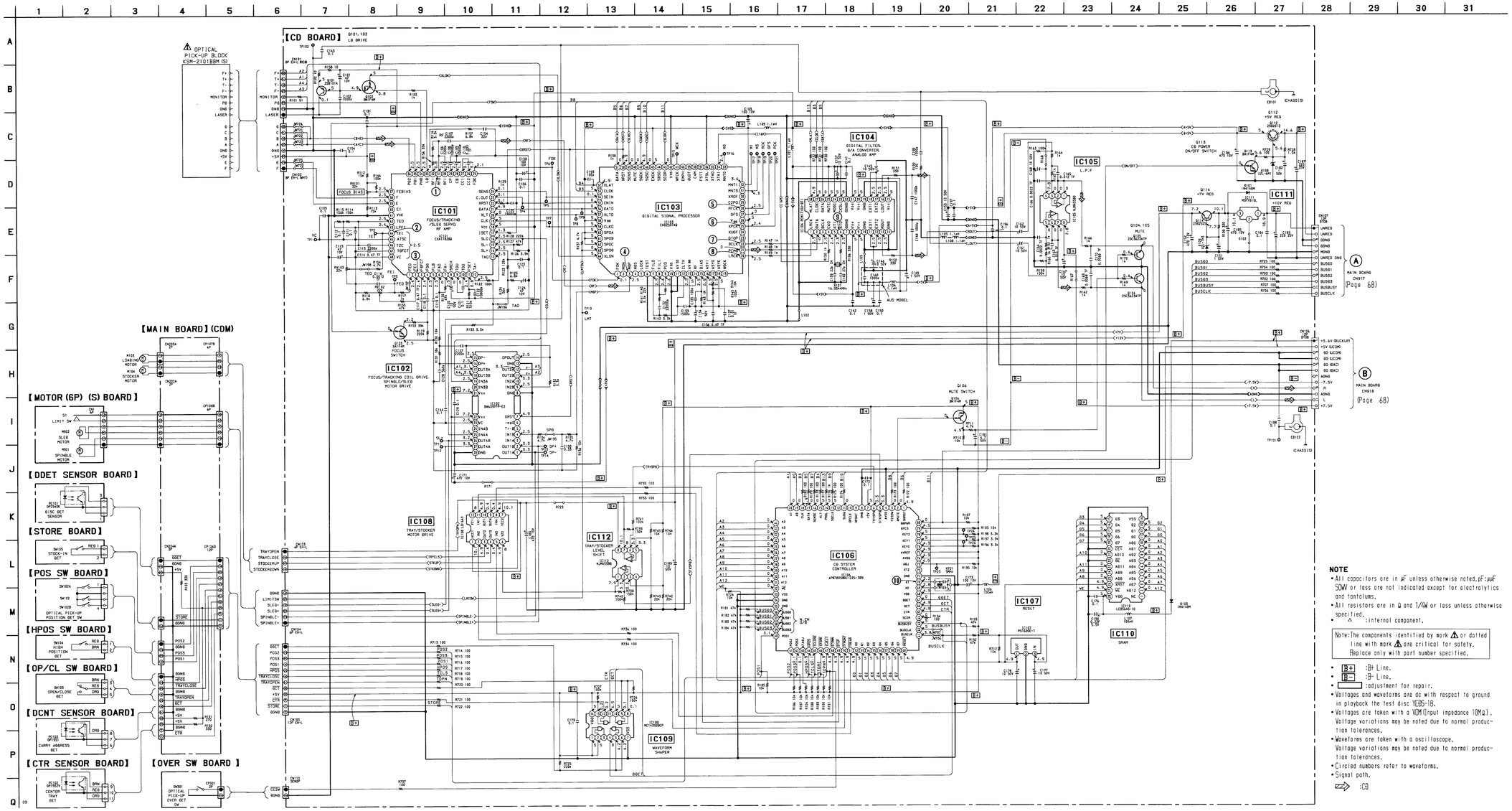
Note:

- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▨ : Pattern from the side which enable seeing.



6-4. SCHEMATIC DIAGRAM — CD SECTION —

- See page 86 for IC Block Diagrams.
- See page 93 for IC Pin Functions. (IC106)



• Waveformes

① 1.2Vp-p — IC101 ㉛ RFO PLAY

② APPROX 100mVp-p — IC101 ㊹ TEI PLAY

③ APPROX 80mVp-p — IC101 ② FEI PLAY

④ 2.5Vp-p, 7.5μsec — IC103 ③ MDP PLAY

⑤ 5.1Vp-p, 136μsec — IC103 ㉘ RFCK

⑥ 5.8Vp-p, 4.2MHz — IC103 ㉙ XPCK

⑦ 5.6Vp-p, 2.1MHz — IC103 ㉒ BCLK

⑧ 5.1Vp-p, 44.1kHz — IC103 ㉖ LRCK

⑨ 6Vp-p, 16.9335MHz — IC104 ⑥ XTO

⑩ 3.2Vp-p, 5MHz — IC106 ⑲ X1

NOTE

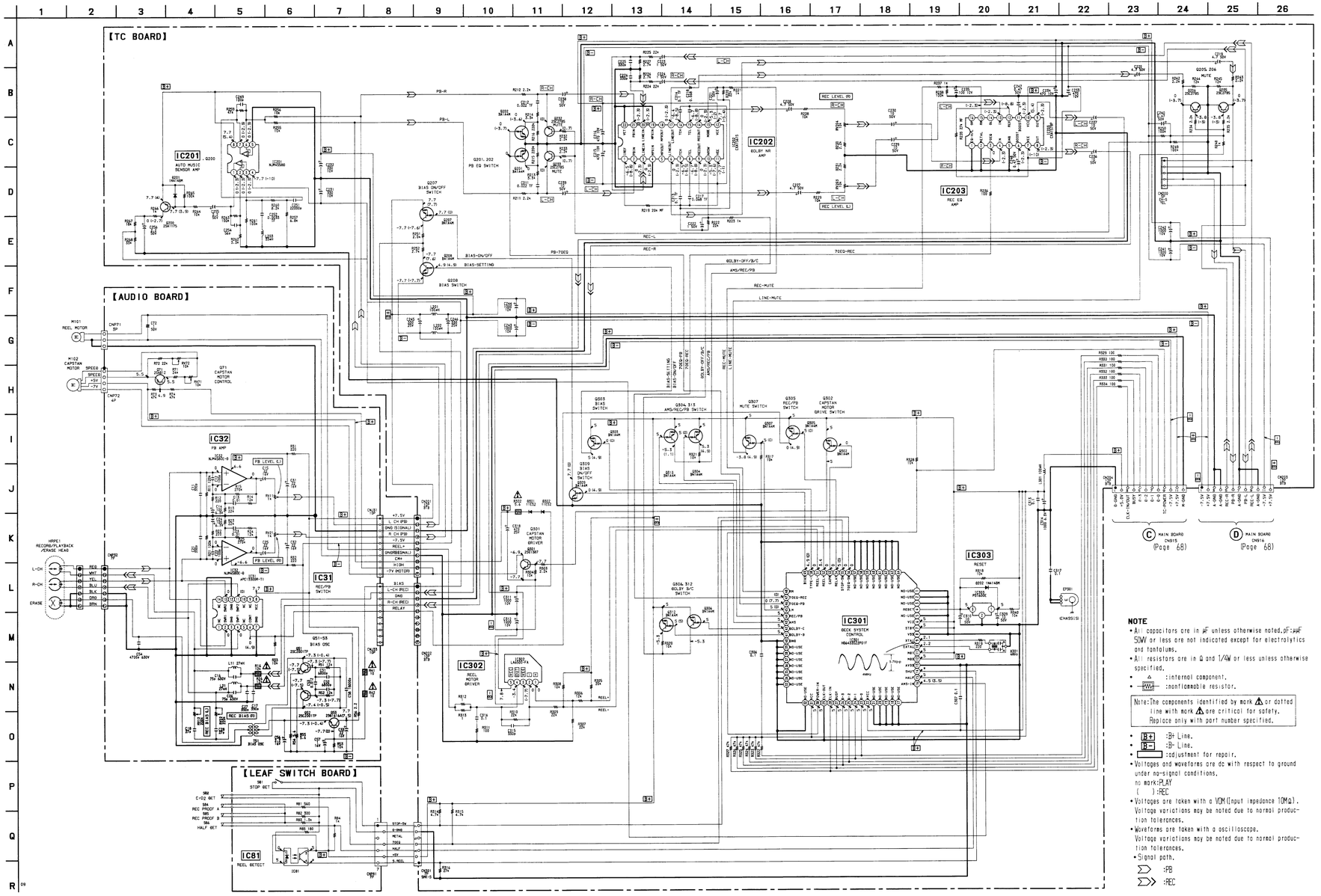
- All capacitors are in μF unless otherwise noted. pF: μF. 50WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : Internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- B− : B− Line.
- ■ : Adjustment for repair.
- Voltages and waveforms are dc with respect to ground in playback the test disc YEDS-18.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : CD

6-5. SCHEMATIC DIAGRAM — DECK SECTION —

- See page 88 for IC Block Diagrams.
- See page 95 for IC Pin Functions. (IC301)



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ⚠ : internal component.
- ▭ : nonflammable resistor.

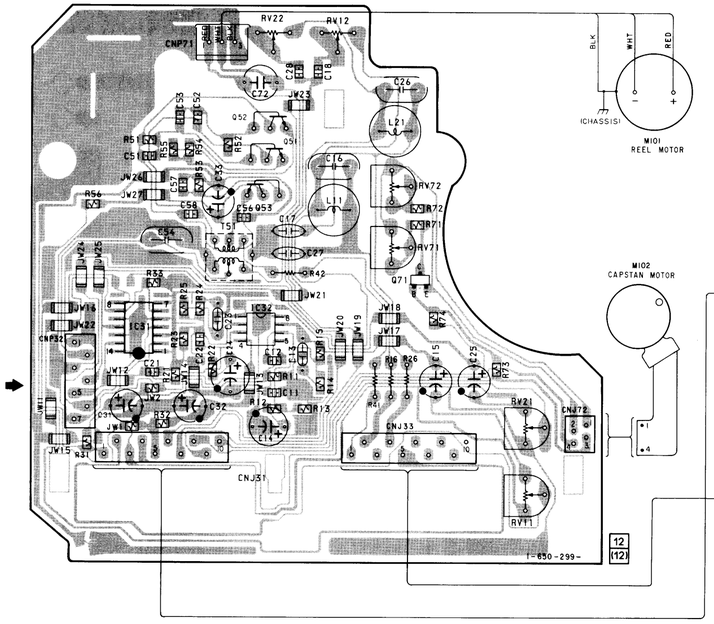
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- B− : B− Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: PLAY
  ( ): REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC

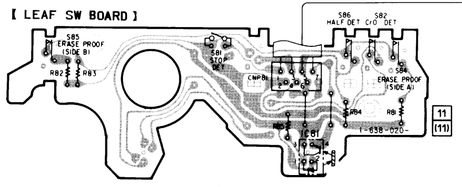
6-6. PRINTED WIRING BOARD — DECK SECTION —

• See page 38 for Circuit Boards Location.

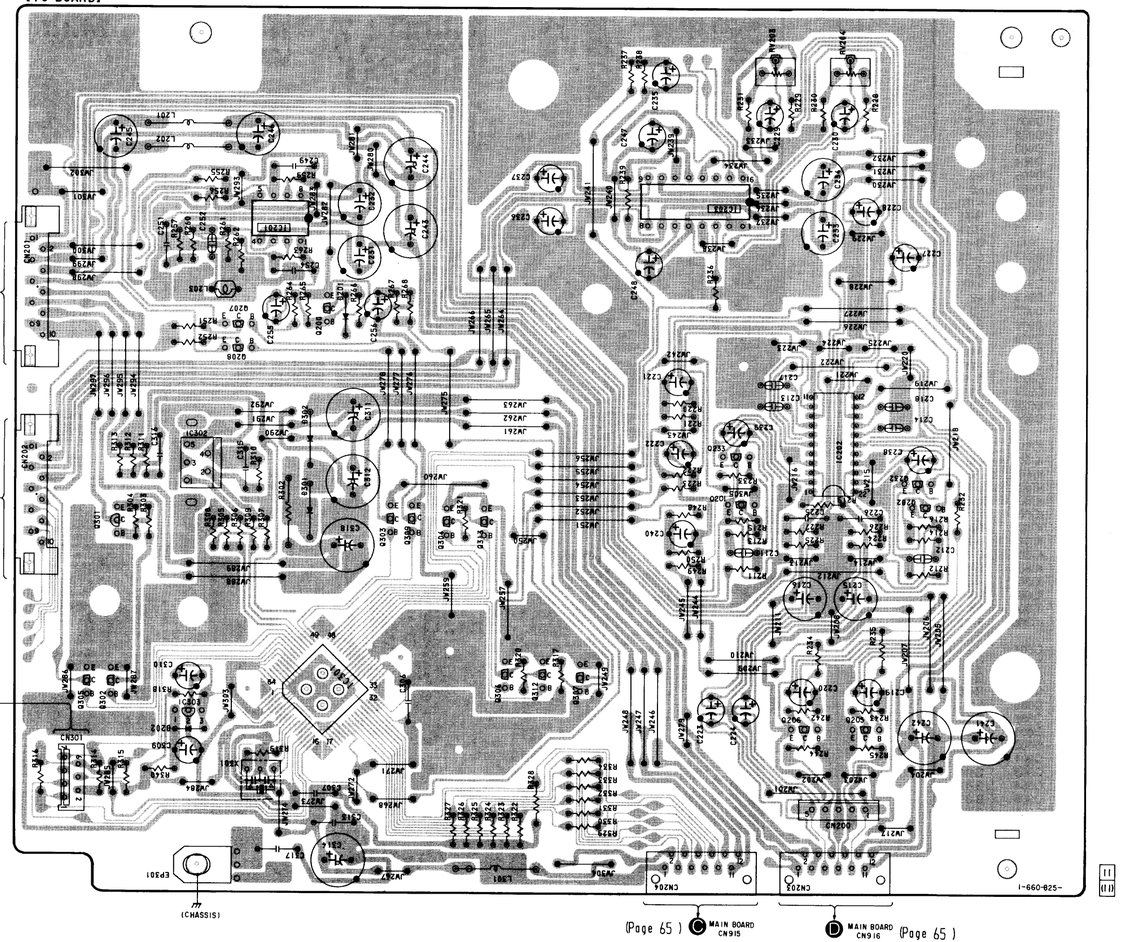
【 AUDIO BOARD 】



【 LEAF SW BOARD 】



【TC BOARD】



(Page 65) C MAIN BOARD CN915 D MAIN BOARD CN916 (Page 65)

• **Semiconductor Location**

Ref. No.	Location
D201	D-12
D202	H-10
D301	E-12
D302	E-12
IC31	D-3
IC32	D-4
IC81	I-6
IC201	C-11
IC202	E-17
IC203	C-16
IC301	G-12
IC302	E-11
IC303	G-11
Q51	B-5
Q52	B-4
Q53	C-4
Q71	C-6
Q200	D-12
Q201	E-16
Q202	E-17
Q205	G-17
Q206	G-16
Q207	D-11
Q208	D-11
Q232	E-17
Q233	E-16
Q301	F-10
Q302	G-10
Q303	F-12
Q304	F-13
Q305	G-10
Q306	G-14
Q307	G-14
Q309	F-13
Q312	G-14
Q313	F-13

Note:

- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▒▒ : Pattern from the side which enable seeing.

6-7. PRINTED WIRING BOARD — OSD SECTION —

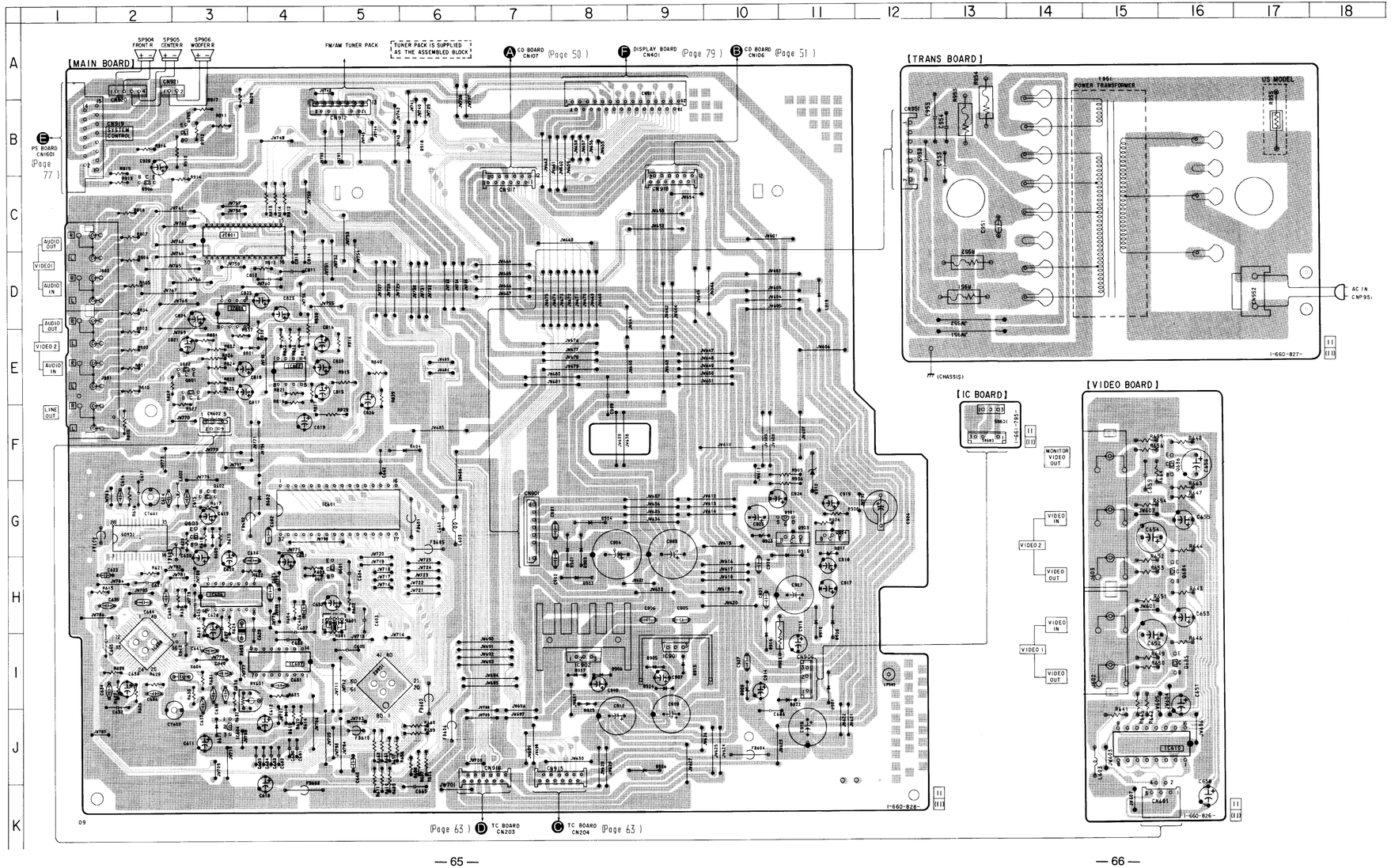
• See page 38 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D601	H-4
D602	G-4
D604	F-6
D605	G-3
D610	J-4
D611	J-3
D801	E-3
D901	H-8
D902	H-8
D903	H-8
D904	G-8
D905	I-9
D906	I-8
D908	I-10
D909	H-11
D910	H-11
D911	G-11
D912	G-11
D913	G-11
D914	I-10
D915	I-9
D917	I-8
D918	B-6
D919	D-11
D921	I-11
D922	I-11
D923	G-10
D924	I-9
D925	I-8
D926	J-9
IC601	G-5
IC602	I-5
IC604	J-3
IC605	G-2
IC606	H-3
IC607	I-4
IC608	I-2
IC610	J-15
IC801	C-3
IC802	E-4
IC803	D-3
IC901	I-9
IC902	I-8
IC905	F-13
Q601	H-5
Q602	G-3
Q603	G-3
Q684	H-16
Q685	I-16
Q686	F-16
Q801	E-3
Q802	E-3
Q901	G-11
Q903	G-11
Q904	G-11
Q905	B-3
Q906	C-2

Note:

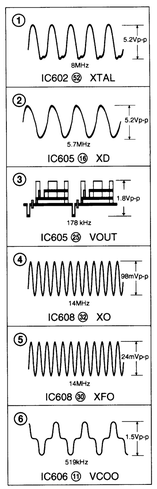
- ⟜—— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enable seeing.

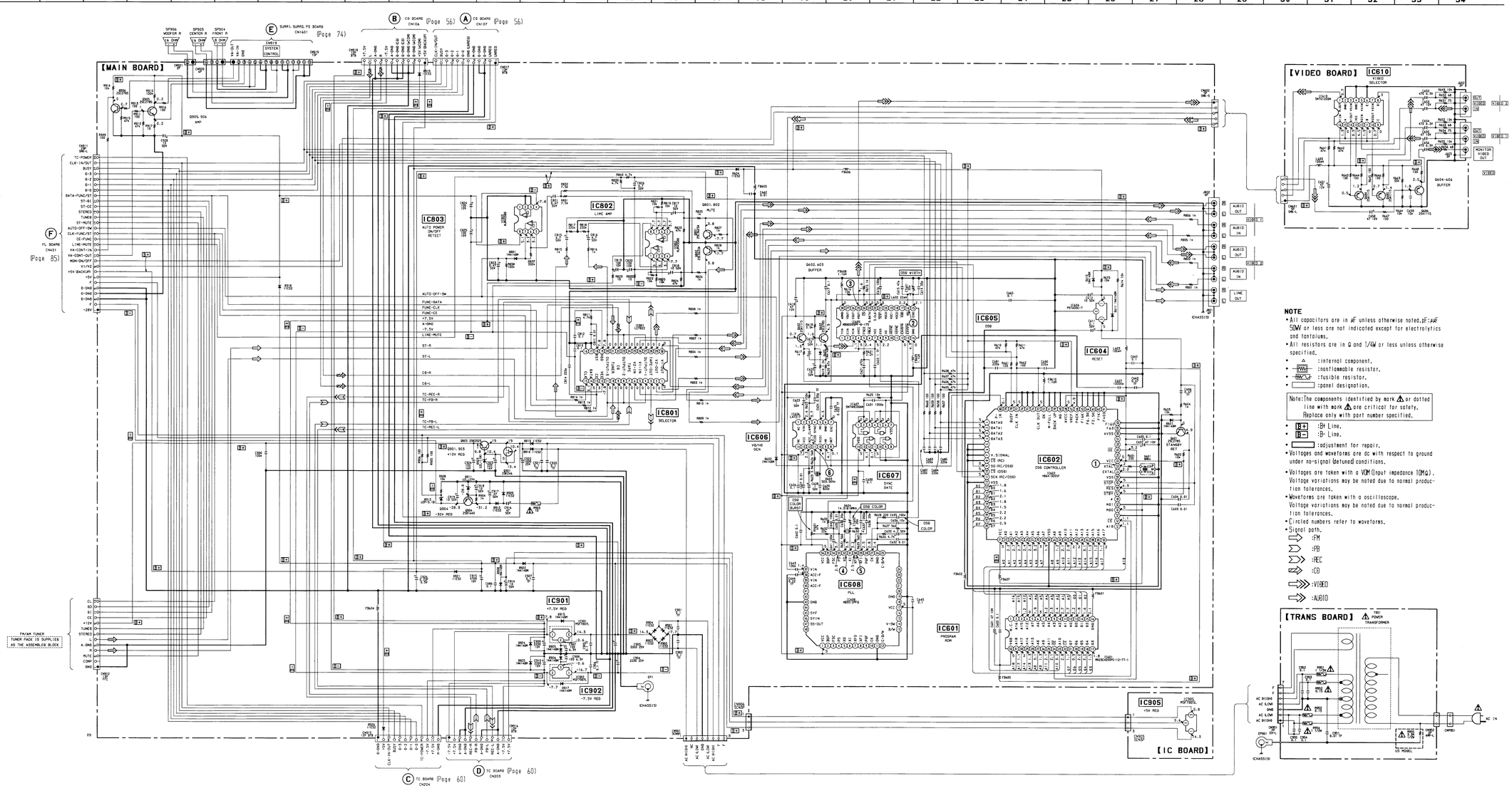


6-8. SCHEMATIC DIAGRAM — OSD SECTION —

- See page 89 for IC Block Diagrams.
- See page 99 for IC Pin Functions. (IC602, 605)

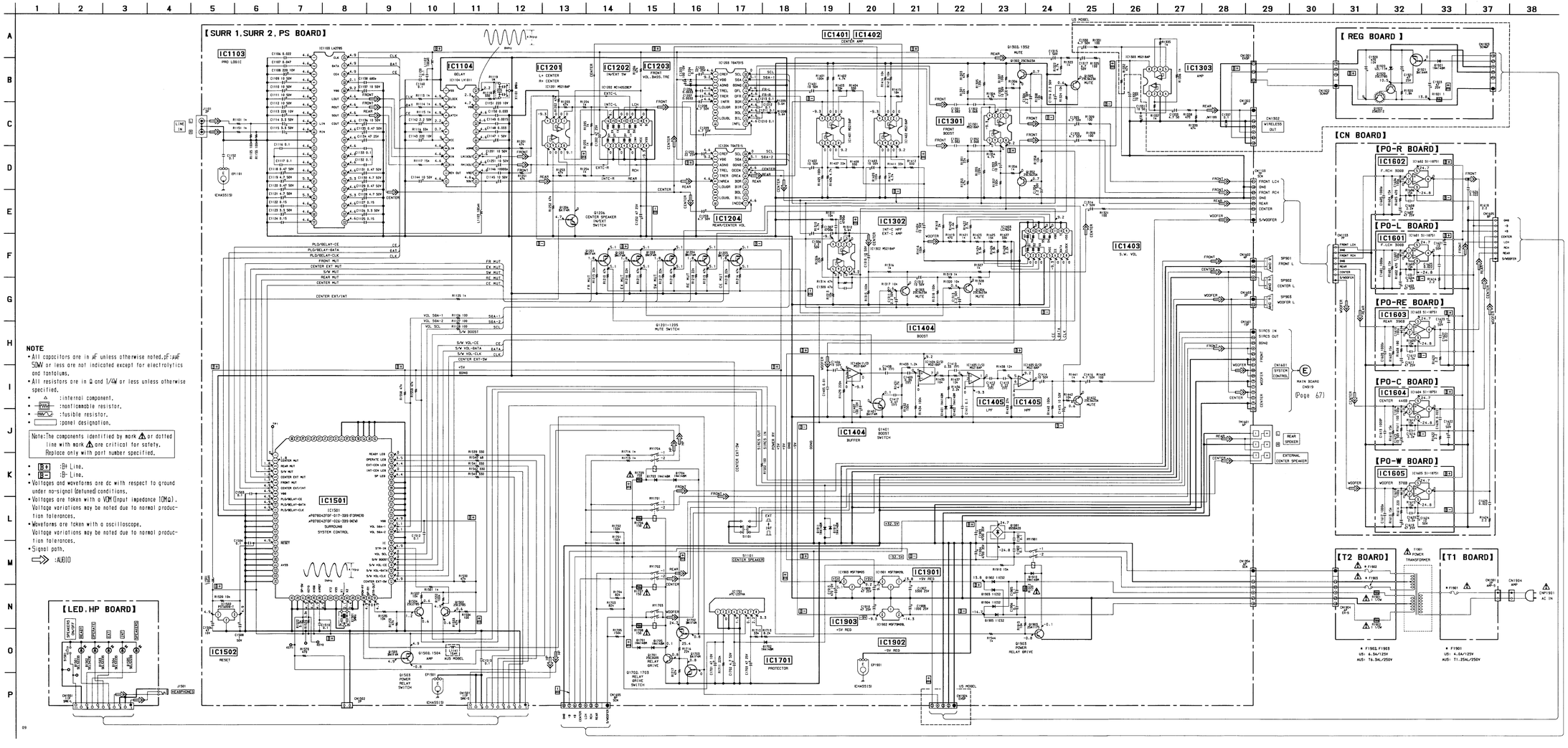
• Waveformes




【MAIN BOARD】
【VIDEO BOARD】
【TRANS BOARD】
【IC BOARD】
IC601
IC602
IC603
IC604
IC605
IC606
IC607
IC608
IC610
IC801
IC802
IC901
IC902
IC905
NOTE
• All capacitors are in μF unless otherwise noted. pF: μF
50WV or less are not indicated except for electrolytics and tantaliums.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
• B+ : B+ Line.
• B- : B- Line.
• adjustment for repair.
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
• Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Signal path.
:FM
:PB
:REC
:CD
:VIDEO
:AUDIO

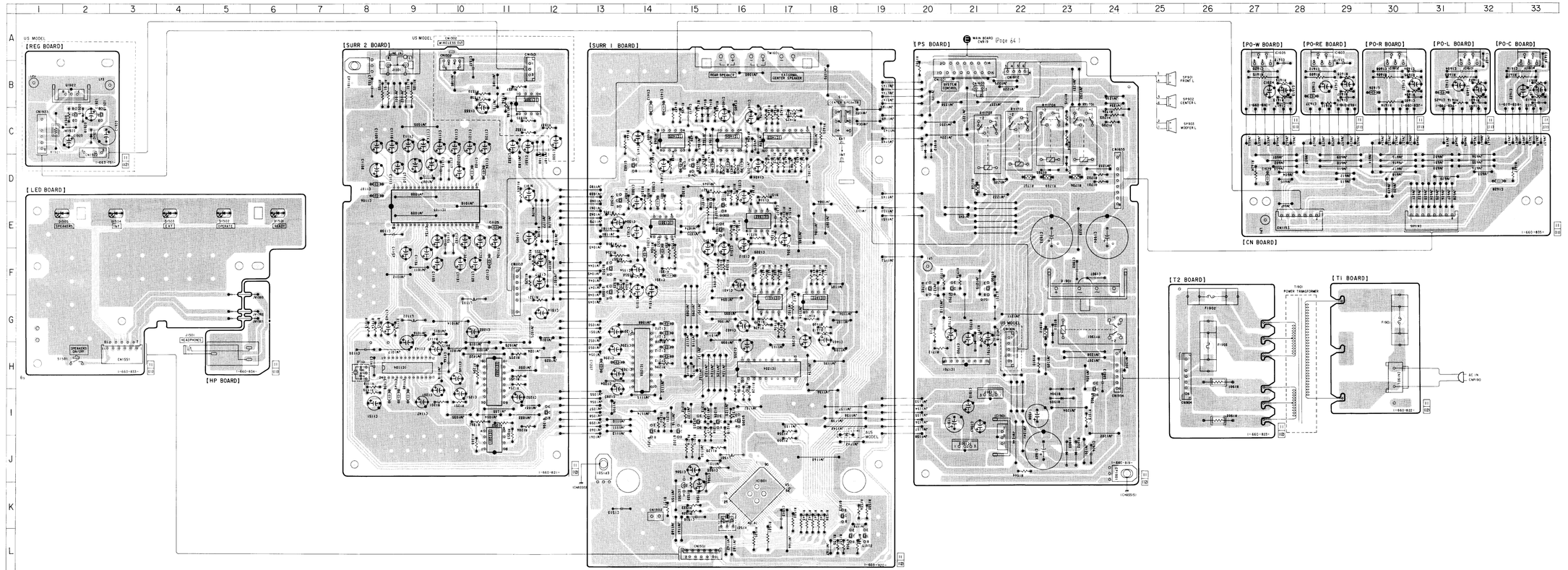
6-9. SCHEMATIC DIAGRAM — SURROUND AMP SECTION —

- **See page 91 for IC Block Diagrams.**
- **See page 102 for IC Pin Functions. (IC1501)**



6-10. PRINTED WIRING BOARD — SURROUND AMP SECTION —

• See page 38 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1401	B-15	IC1501	J-16
D1402	B-15	IC1502	K-15
D1501	E-6	IC1601	B-32
D1502	E-5	IC1602	B-30
D1503	E-4	IC1603	A-29
D1504	E-3	IC1604	B-33
D1505	E-1	IC1605	A-27
D1701	G-21	IC1701	H-20
D1702	G-20	IC1901	I-22
D1703	D-22	IC1902	I-21
D1704	D-23	IC1903	J-21
D1705	F-21		
D1901	F-23	Q1201	J-14
D1902	J-23	Q1202	J-15
D1903	J-23	Q1203	I-15
D1904	I-23	Q1204	I-15
D1905	I-23	Q1205	I-16
D1910	G-23	Q1206	I-12
D1911	C-20	Q1301	D-15
D1912	C-20	Q1302	D-13
D1920	C-2	Q1303	E-16
D1921	C-2	Q1304	E-15
		Q1305	F-13
IC1103	E-10	Q1351	F-15
IC1104	H-9	Q1352	F-13
IC1201	J-11	Q1401	D-15
IC1202	H-11	Q1402	D-14
IC1203	H-14	Q1502	L-19
IC1204	H-17	Q1503	K-18
IC1301	E-14	Q1504	L-18
IC1302	E-16	Q1701	G-21
IC1303	B-12	Q1702	G-20
IC1401	G-17	Q1703	F-20
IC1402	G-18	Q1903	I-24
IC1403	C-17	Q1920	C-2
IC1404	C-16	Q1921	B-2
IC1405	C-15	Q1922	B-2

Note:

- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enable seeing.

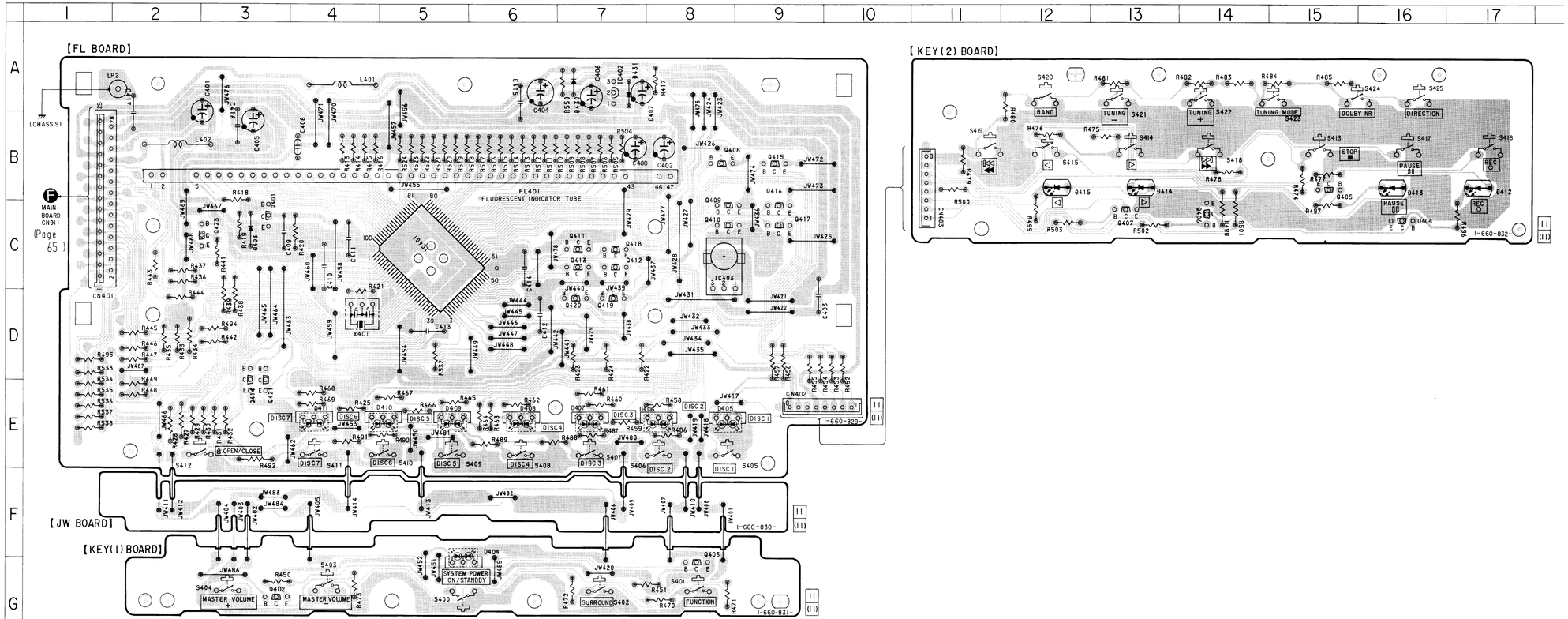
6-11. PRINTED WIRING BOARD — DISPLAY SECTION —

• See page 38 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D403	C-3
D404	F-6
D405	E-8
D406	E-8
D407	E-7
D408	E-6
D409	E-5
D410	E-5
D411	E-4
D412	B-17
D413	B-16
D414	B-13
D415	B-12
D430	A-7
D431	A-7
IC401	C-5
IC402	A-7
IC403	C-8
Q401	C-3
Q402	G-3
Q403	F-8
Q404	C-16
Q405	B-15
Q406	C-14
Q407	C-13
Q408	B-8
Q409	B-8
Q410	C-8
Q411	C-7
Q412	C-7
Q413	C-7
Q414	E-3
Q415	B-9
Q416	B-9
Q417	C-9
Q418	C-7
Q419	D-7
Q420	D-7
Q421	E-3
Q423	C-3

Note:
- ⟷ : parts extracted from the component side.
- △ : internal component.
- ▒ : Pattern from the side which enable seeing.



NOTE

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ :internal component.
- ▭ :panel designation.
- B+ :B+ Line.
- B- :B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.

【FL BOARD】

【KEY (2) BOARD】

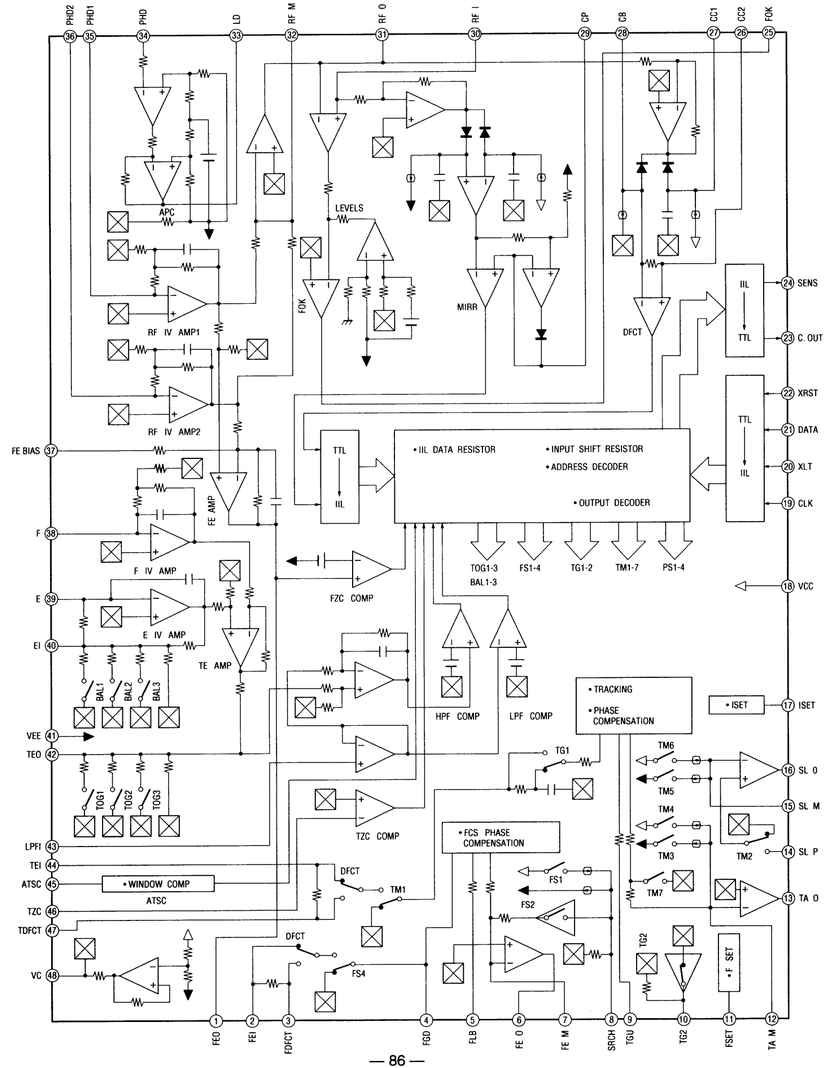
【KEY (1) BOARD】

【JW BOARD】

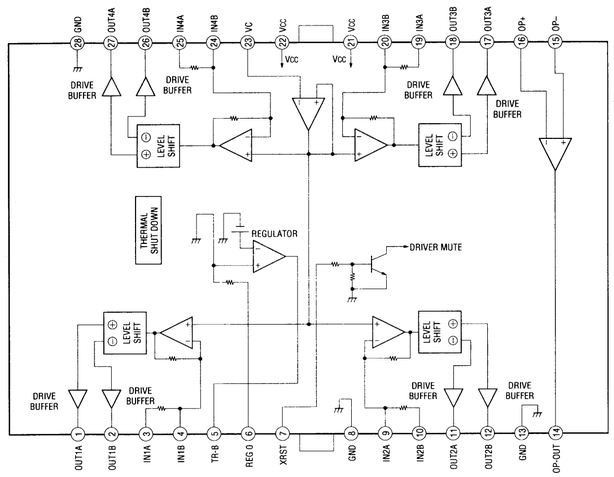
6-13. IC BLOCK DIAGRAMS

— CD SECTION —

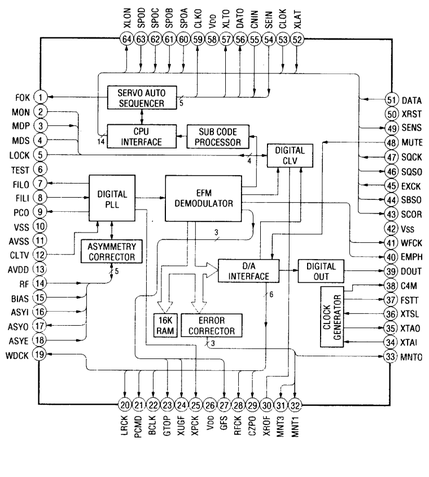
IC101 CXA1782BQ



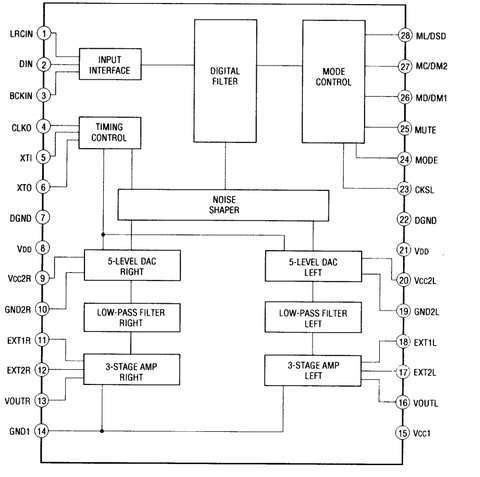
IC102 BA6397FP-E2



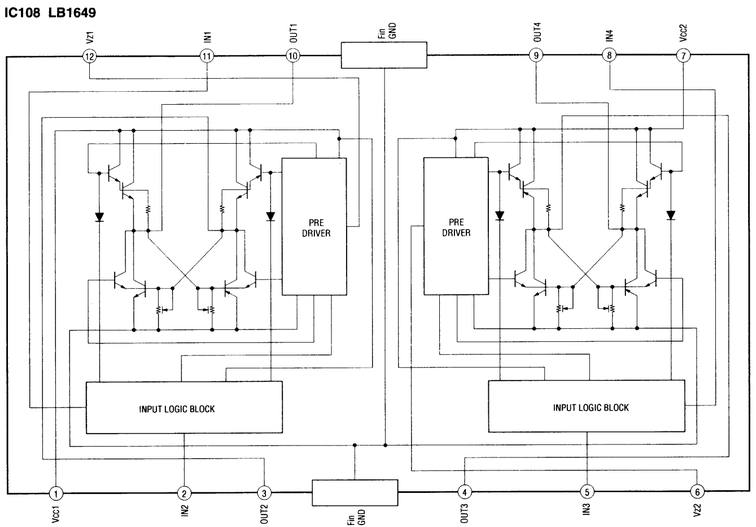
IC103 CXD2507AQ



IC104 PC1710U-BT1

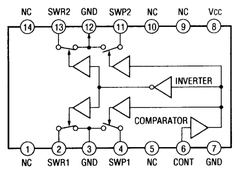


IC108 LB1649

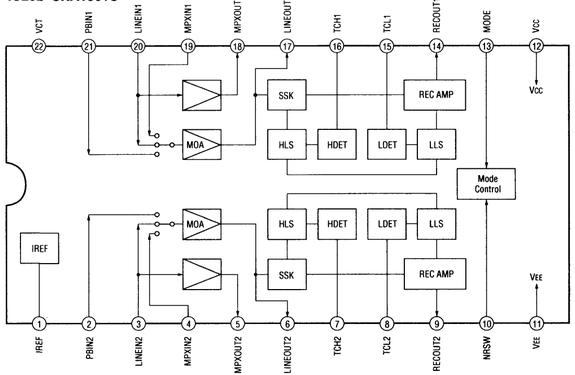


— DECK SECTION —

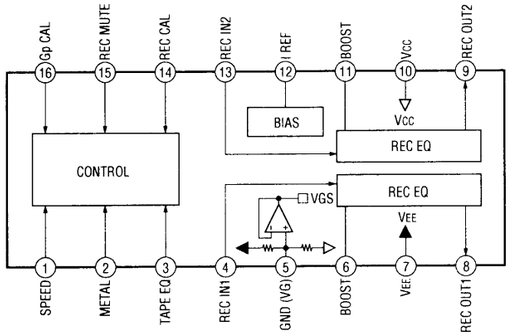
IC31 uPC1330GR



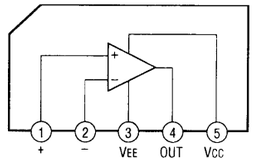
IC202 CXA1561S



IC203 CXA1578P

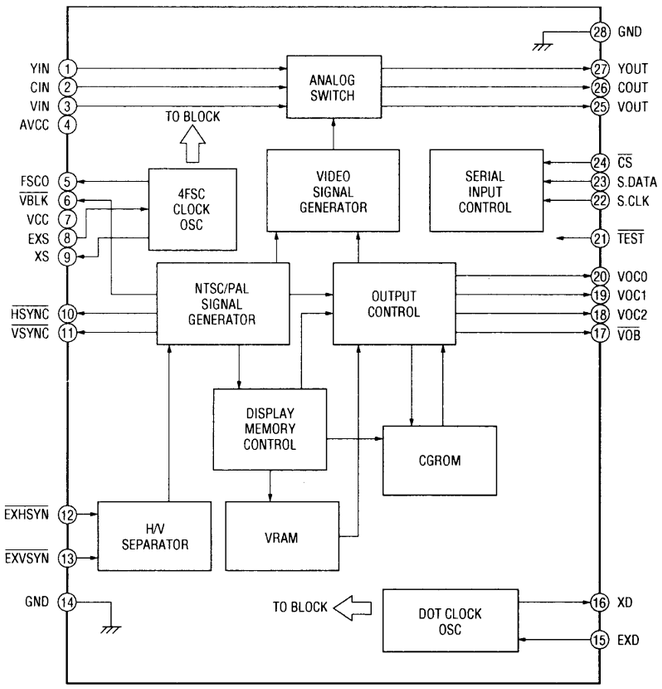


IC302 LA6500-FA

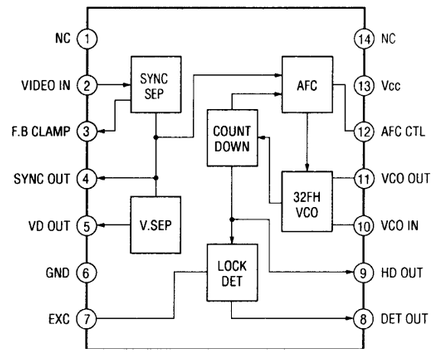


— OSD SECTION —

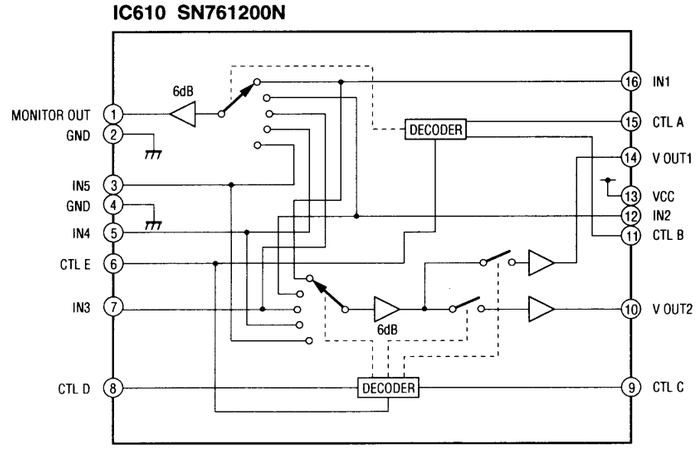
IC605 MB90095PF-G-175



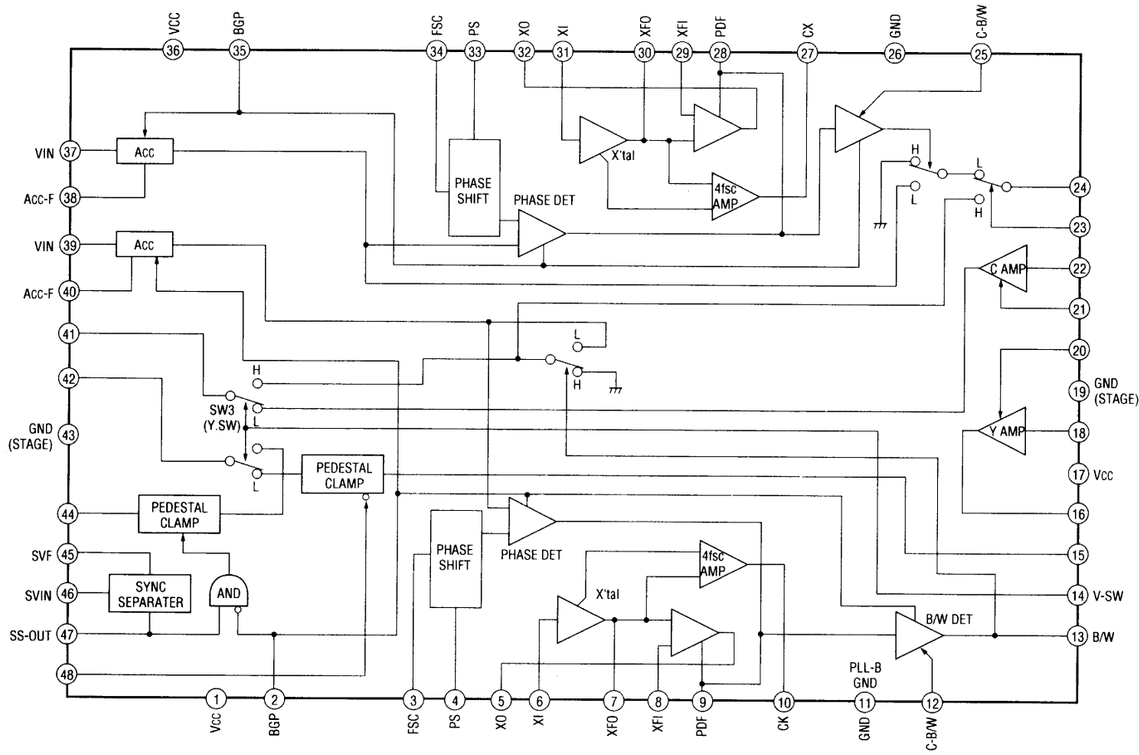
IC606 LA7217



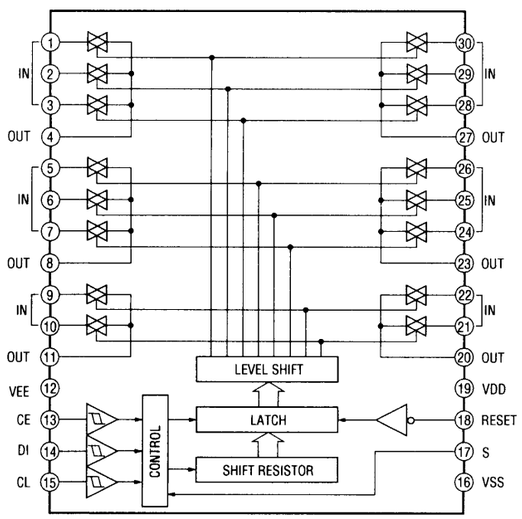
IC610 SN761200N



IC608 MB3512PFQ

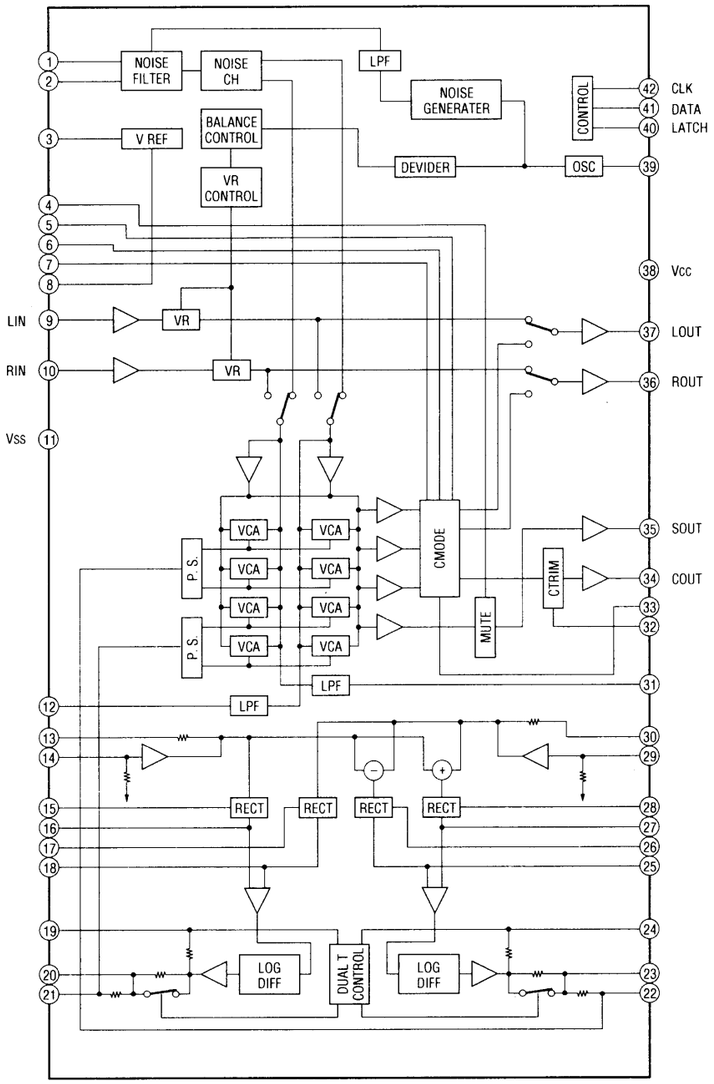


IC801 LC7822

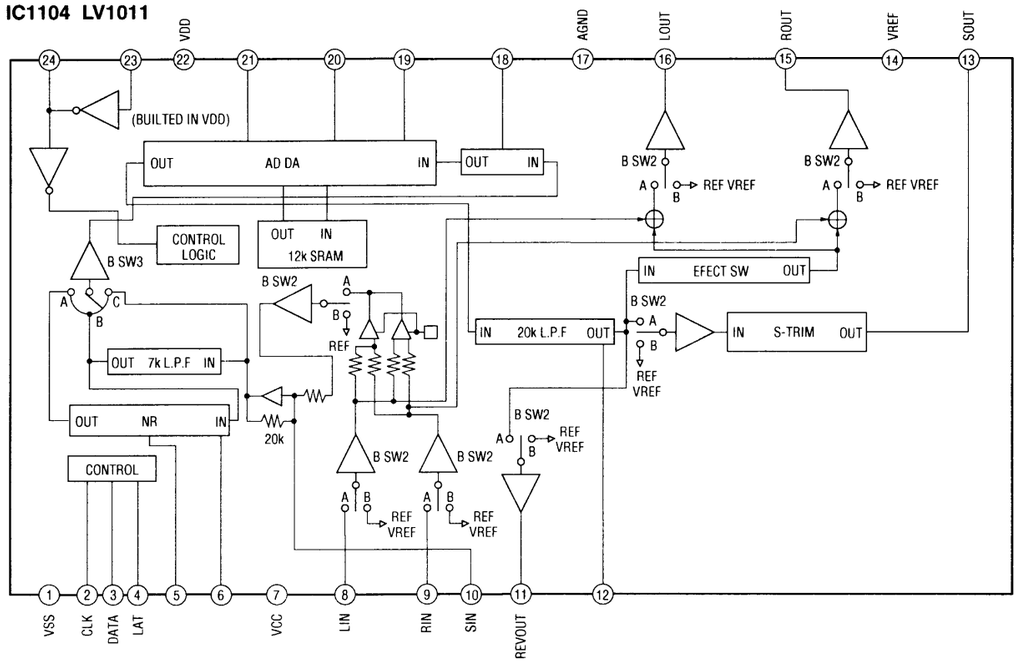


— SURROUND AMP SECTION —

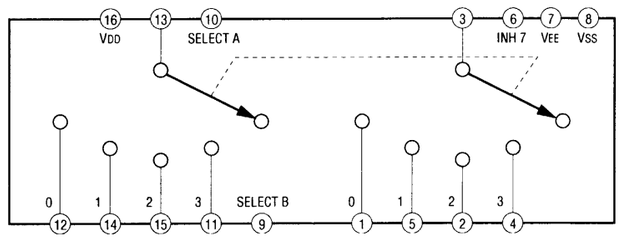
IC1103 LA2785



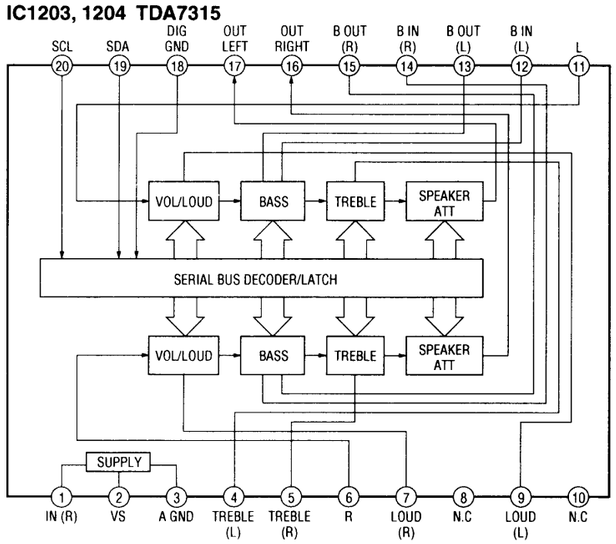
IC1104 LV1011



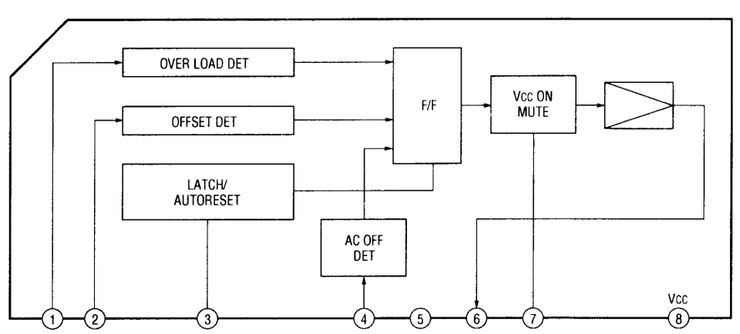
IC1202 MC14052BCP



IC1203, 1204 TDA7315



IC1701 uPC1237HA

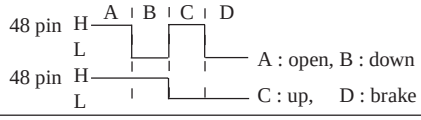
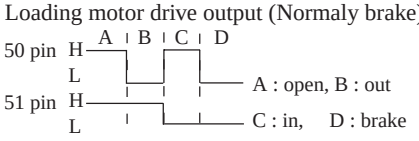


6-14. IC PIN FUNCTION

• IC106 CD System Controller (μPD78058GC-225-3B9)

Pin No.	Pin Name	I/O	Function
1	BDRST	O	Reset signal output to BD block
2	AMUTE	O	Muting ON/OFF output “L”: ON
3	FCSSW	O	Focus gain switching output
4	AVSS	—	Ground (A/D)
5	STKSPD	O	Stocker motor control output
6	TRYSPD	O	Loading motor control output
7	+5V	I	A/D reference voltage input (+5V)
8	GND	—	Ground
9	DPDAT	O	Not used
10	DPCLK	O	
11	SUBQ	I	Sub-Q data input from DSP
12	—	O	Not used
13	SQCLK	O	Sub-Q data reading clock output
14	PRGL	O	Serial data latch pulse output to D/F
15	XLT	O	Serial data latch pulse output to DSP and SSP
16	SENSE	I	Status input from DSP and SSP
17	DATA	O	Serial data output to DSP, SSP and D/F
18	CLK	O	Serial clock output to DSP, SSP and D/F
19 to 31	A0 to A12	O	Address output to SRAM
32	$\overline{WE}$	O	Write enable output to SRAM “L”: write, “H”: read
33	VSS	—	Ground
34, 35	GND	—	
36 to 39	BUSD0 to BUSD3	I/O	Y. bus data input/output
40 to 42	POS1 to POS3	I	Position detect input of optical pick-up block
43	AFADJ	O	Not used
44	$\overline{HPOS}$	I	Stocker absolute address detection input
45	$\overline{TCLOSE}$	I	Tray close detection input “L”: close
46	$\overline{STORE}$	I	Carried stock-in detection input “L” stock-in
47	$\overline{EJECT}$	I	Tray open detection input “L”: open

• Abbreviation
DSP : Digital Signal Processor
SSP : Servo Signal Processor
D/F : Digital Filter

Pin No.	Pin Name	I/O	Function
48	$\overline{\text{STDWN}}$	O	Stocker motor drive output (Normaly brake) 
49	$\overline{\text{STUP}}$	O	
50	$\overline{\text{TFRONT}}$	O	Loading motor drive output (Normaly brake) 
51	$\overline{\text{TREAR}}$	O	
52 to 59	D0 to D7	I/O	Data input/output from SRAM
60	$\overline{\text{RESET}}$	I	Reset input “L”: reset
61	BUSCLK	I	Y. bus clock input
62	BUSCLK	O	Y. bus clock output
63	BUS BUSY	I/O	Y. bus busy signal input/output
64	SCOR	I	Sub code sync S0, S1 detection input
65	CTR	I	Tray center position detection input
66	DCT	I	Stocker relativ address detection input
67	DDET	I	Slit sensor input of disc tray “L”: disc load
68	VDD	—	+5V power supply
69	X2	O	Clock (5MHz)
70	X1	I	
71	GND	—	Ground
72	XT2	—	Not used
73	ADJ	I	Test pin “L”: test mode
74	AVDD	—	+5V power supply (A/D)
75	AVREF	I	A/D reference voltage input (+5V)
76 to 78	KEY0 to KEY2	I	Not used (Fixed at “H”)
79	DPCS	I	
80	BDPWR	O	BD block power ON/OFF output

• **IC301 Deck System Control (HD6433522P01F)**

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Function</th></tr>
<tr><td>1 to 3</td><td>—</td><td>—</td><td>Not used</td></tr>
<tr><td>4</td><td>RESET</td><td>I</td><td>Reset input “L”: reset</td></tr>
<tr><td>5</td><td>—</td><td>—</td><td>Not used</td></tr>
<tr><td>6</td><td>VCC</td><td>—</td><td>+5V power supply</td></tr>
<tr><td>7</td><td>STBY</td><td>I</td><td>Standby detection input</td></tr>
<tr><td>8</td><td>VSS</td><td>—</td><td>Ground</td></tr>
<tr><td>9</td><td>XTAL</td><td>O</td><td rowspan="2">Clock (4MHz)</td></tr>
<tr><td>10</td><td>EXTAL</td><td>I</td></tr>
<tr><td>11</td><td>MD1</td><td>I</td><td rowspan="2">Mode setting input (Fixed at “H”)</td></tr>
<tr><td>12</td><td>MD2</td><td>I</td></tr>
<tr><td>13</td><td>AVSS</td><td>—</td><td>Ground (A/D)</td></tr>
<tr><td>14</td><td>SHUT</td><td>I</td><td>Reel table detection input</td></tr>
<tr><td>15</td><td>HALF</td><td>I</td><td>Half switch detection input</td></tr>
<tr><td>16</td><td>AMS-IN</td><td>I</td><td>Auto music sensor detection input</td></tr>
<tr><td>17 to 21</td><td>—</td><td>—</td><td>Not used</td></tr>
<tr><td>22</td><td>AVCC</td><td>—</td><td>+5V power supply (A/D)</td></tr>
<tr><td>23 to 26</td><td>D-0 to D-3</td><td>I/O</td><td>Y. bus data input/output</td></tr>
<tr><td>27</td><td>BUSY</td><td>I</td><td>Y. bus busy input/output</td></tr>
<tr><td>28</td><td>CLK-IN</td><td>I</td><td>Y. bus clock input/output</td></tr>
<tr><td>29</td><td>CLK-OUT</td><td>I</td><td>Not used</td></tr>
<tr><td>30</td><td>POWR-IN</td><td>I</td><td>Power off detection input “L”: OFF</td></tr>
<tr><td>31</td><td>VCC</td><td>—</td><td>+5V power supply</td></tr>
<tr><td>32 to 39</td><td>—</td><td>—</td><td>Not used</td></tr>
<tr><td>40</td><td>GND</td><td>—</td><td>Ground</td></tr>
<tr><td>41</td><td>DOLBY-B</td><td>O</td><td rowspan="2">DOLBY NR B/C switching output
<table><tr><th></th><th>OFF</th><th>B</th><th>C</th></tr><tr><td>DOLBY B</td><td>H</td><td>L</td><td>No Fixed</td></tr><tr><td>DOLBY C</td><td>H</td><td>H</td><td>L</td></tr></table></td></tr>
<tr><td>42</td><td>DOLBY-C</td><td>O</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Function</th></tr>
<tr><td>43</td><td>AMS</td><td>O</td><td>Auto music sensor control output</td></tr>
<tr><td>44</td><td>REC-PB</td><td>O</td><td>REC/PB control output</td></tr>
<tr><td>45</td><td>LM</td><td>O</td><td>Line mute ON/OFF output “L”:ON</td></tr>
<tr><td>46</td><td>70EQ-PB</td><td>O</td><td>PB equalizer switching output “L”: TYPE-I, “H”: TYPE-II, IV</td></tr>
<tr><td>47</td><td>70EQ-REC</td><td>O</td><td>REC equalizer switching output “L”: TYPE-I, “H”: TYPE-II, IV</td></tr>
<tr><td>48</td><td>RM</td><td>O</td><td>REC mute ON/OFF output “L”:ON</td></tr>
<tr><td>49</td><td>BIAS</td><td>O</td><td>Bias ON/OFF output “H”: ON</td></tr>
<tr><td>50</td><td>TYPE-I</td><td>O</td><td>Bias setting output (When bias on, “L”: TYPE-I, “H”: other)</td></tr>
<tr><td>51</td><td>REEL–</td><td>O</td><td rowspan="2">Reel motor control output</td></tr>
<tr><td>52</td><td>REEL+</td><td>O</td></tr>
<tr><td>53</td><td>CAPM</td><td>O</td><td>Capstan motor ON/OFF output “L”:ON</td></tr>
<tr><td>54</td><td>RELAY</td><td>O</td><td>REC/PB switching relay control output</td></tr>
<tr><td>55</td><td>STOP-SW</td><td>I</td><td>Stop switch detection input “H”: OFF=stop position</td></tr>
<tr><td>56</td><td>70EQ-SW</td><td>I</td><td>Tape type detection input “H”: TYPE II, IV</td></tr>
<tr><td>57 to 64</td><td>—</td><td>—</td><td>Not used</td></tr>
</table>

	AMS	PB	REC
43 pin	L	H	H
44 pin	No Fixed	H	L

	TRG	FWD. H	FWD	STOP
51 pin	L	H	open	L
52 pin	H	L	L	L

• **IC401 Display Control, FL Driver (μPD780204GF-020-3BA)**

Pin No.	Pin Name	I/O	Function
1	VDD	—	+5V power supply
2	LED7-O	O	LED drive output (“H”: active)
3	LED6-O	O	
4	LED-OPE	O	
5	LED-RDY	O	
6	LINE-MUTE	O	Line mute ON/OFF output “L”: ON
7	CE-FUNC	O	Chip enable output to video selector
8	VA-CONT-OUT	O	Remote control signal output (inside)
9	VA-CONT-IN	I	Remote control signal input (inside)
10	RESET	I	Reset input “L”: reset
11	X2	O	Clock (5MHz)
12	X1	I	
13	IC	—	Not used
14	XT2	O	
15	XT1	I	
16	VDD	—	+5V power supply
17	CLK-ST/FUNC	O	Serial clock output to tuner block and video selector
18	DATA-ST/FUNC	O	Serial data output to tuner block and video selector
19	ST-DATA-IN	I	Serial data input from tuner block
20	NC	I	Not used
21	ST-CE	O	Chip eneble output to tuner block
22	STEREO	I	Stereo signal input from tuner block “L”: stereo
23	TUNED	I	Tuned signal input from tuner block “L”: tuned
24	ST-MUTE	O	Tuner mute ON/OFF output “H”: ON
25	AVSS	—	Ground (A/D)
26	V1/V2	O	Video selector switching output
27	MON-ON/OFF	O	
28	TC-POWER	O	Power off output to deck block (“H” Normal, “L”: Black-out)
29	AUTO-OFF	I	VIDEO 1 and VIDEO 2 audio input signal detection input (When no input more than 3 minutes)
30	DEST	I	Model and destination detect input
30 to 33	KEY-1 to KEY-3	I	Key input (A/D)

MONITOR OUT	VIDEO1	VIDEO2	MUTE
26 pin	L	H	H
27 pin	L	L	H

• Abbreviation
FL : Fluorescent indicator tube

Pin No.	Pin Name	I/O	Function
34	AVDD	—	+5V power supply
35	AVREF	I	A/D reference voltage input (+5V)
36	BACKUP	I	AC OFF detection input “L”: AC OFF
37	BUSY	I/O	Y. bus busy input/output
38	CLK-OUT	O	Y. bus clock input
39	CLK-IN	I	Y. bus clock outut
40	VSS	—	Ground
41	SIRCS-IN	I	Remote control signal input (outside)
42 to 45	D3 to D0	I/O	Y. bus data input/output
47	LED7-G	O	LED drive output “H”: active
48	LED6-G	O	
49	LED5-O	O	
50	LED5-G	O	
51	LED4-O	O	
52	LED4-G	O	
53	LED3-O	O	
54	LED3-G	O	
55	LED2-O	O	
56	LED2-G	O	
57	LED-11	O	
58	LED-12	O	
59	LED-13	O	
60	LED-14	O	
61	LED1-O	O	
62	LED1-G	O	
63 to 78	P1 to P16	O	Segment output to FL
79	VLOAD	—	–27V power supply for FL
80 to 84	P17 to P21	O	Segment output to FL
85 to 100	16G to 1G	O	Grid output to FL

• **IC602 OSD Controller (HD6413004F)**

Pin No.	Pin Name	I/O	Function
1 to 4	DATA0 to DATA3	I/O	Y. bus data input/output
5,6	—	I	Not used
7	V. SIGNAL	I	
8	$\overline{CS}$ (RC)	I	
9	SO (RC/OSD)	O	Serial data output to OSD
10	$\overline{CS}$ (OSD)	O	Chip select output to OSD
11	SCK (RC/OSD)	O	Serial clock output to OSD
12	VSS	—	Ground
13to 20	D0 to D7	I/O	Data input/output with PROGRAM ROM
21	VCC	—	+5V power supply
22 to 29	A0 to A7	O	Address output to PROGRAM ROM
30	VSS	—	Ground
31 to 41	A8 to A18	O	Address output to PROGRAM ROM
42	$\overline{CE}$	O	Chip enable output to PROGRAM ROM
43	—	I	Not used
44	MD0	I	Mode setting input (Fixed at “H”)
45	MD1	I	Mode setting input (Fixed at “L”)
46	ø	O	Not used
47	$\overline{STBY}$	I	Standby detection input
48	$\overline{RES}$	I	Reset input “L”: reset
49	$\overline{STOP}$	I	AC off detection input
50	VSS	—	Ground
51	EXTAL	I	Clock (8MHz)
52	XTAL	O	
53	VCC	—	+5V power supply
54	—	O	Not used
55	$\overline{OE}$	O	Read enable output to PROGRAM ROM
56, 57	—	O	Not used
58	AVSS	—	Ground (A/D)
59	F63	I	Not used
60	F160	I	Not used
61	F400	I	
62	F1K	I	

Pin No.	Pin Name	I/O	Function
63	F2.5K	I	Not used
64	F6.3K	I	
65	F16K	I	
66	PAEK	I	
67	VREF	I	A/D reference voltage input (+5V)
68	AVCC	—	+5V power supply (A/D)
69	NG	I	Not used
70	BACK UP	I	
71	M-FULL	I	
72	OK	I	
73	CLK OUT	I/O	Y. bus clock output
74 to 76	—	I	Not used
77	CLK IN	I	Y. bus clock input
78	BUSY	I	Y. bus busy input/output
79	—	I/O	Not used
80	P-IR	I	Detection input for switching internal sync/external sync of OSD

• **IC605 OSD (MB90095PF-G-175)**

Pin No.	Pin Name	I/O	Function
1	YIN	I	Luminous signal input for superimpose displays (Not used)
2	CIN	I	Chroma signal input for superimpose displays (Not used)
3	VIN	I	Composite signal input for superimpose displays
4	AVcc	–	Power supply (+5V) (Analog)
5	FSCO	O	Color burst phase signal output
6	$\overline{\text{VBLK}}$	O	Vertical blanking period output (Not used)
7	Vcc	–	Power supply (+5V)
8	EXS	I	External circuit of the clock generator for color burst signals (17MHz)
9	XS	O	External circuit of the clock generator for color burst signals (17MHz) (Not used)
10	$\overline{\text{HSYNC}}$	O	H. SYNC/COMPOSIT SYNC signal output (Not used)
11	$\overline{\text{VSYNC}}$	O	V. SYNC signal output (Not used)
12	$\overline{\text{EXHSYN}}$	I	External H. SYNC signal input
13	$\overline{\text{EXVSYN}}$	I	External V. SYNC signal input
14	GND	–	Ground
15	EXD	I	External circuit of the display dot clock generator
16	XD	O	External circuit of the display dot clock generator
17	$\overline{\text{VOB}}$	O	Character and background period signal output (Not used)
18	VOC2	O	Chroma signal output (Not used)
19	VOC1	O	
20	VOC0	O	
21	$\overline{\text{TEST}}$	I	Test pin (Fixed at “H”)
22	S. CLK	I	Serial clock input for serial transmission
23	S. DATA	I	Serial data input
24	$\overline{\text{CS}}$	I	Chip select input
25	VOUT	O	Composite video signal output
26	COUT	O	Chroma signal output (Not used)
27	YOUT	O	Luminous signal output (Not used)
28	AGND	–	Ground (Analog)

• **IC1501 Surround system Control (New: µPD78042FGF-026-3B9, Former: µPD78042FGF-017-3B9)**

Pin No.	Pin Name	I/O	Function
1	—	—	Not used
2	CENTER MUT	O	Mute ON/OFF output “L”: ON
3	REAR MUT	O	
4	S/W MUT	O	
5	CENTER EXT MUT	O	
6	FRONT MUT	O	
7	CENTER EXT/INT	O	Center speaker select switching output “L”: internal, “H”: external
8	VDD	—	+5V power supply
9	PLO/DELAY-CE	O	Dolby IC serial control
10	PLO/DELAY-DATA	O	
11	PLO/DELAY-CLK	O	
12 to 16	—	—	Not used
17	$\overline{\text{RESET}}$	I	Reset input “L”: reset
18 to 20	—	—	Not used
21	AVSS	—	Ground (A/D)
22 to 26	—	—	Not used
27	SP-SW	I	Speakers/Headphones switching input
28	KEY0	—	Not used
29	AVDD	—	+5V power supply (A/D)
30	AVREF	I	A/D reference voltage intut (+5V)
31	—	—	Not used
32	XT2	O	
33	VSS	—	Ground
34	X1	I	Clock (5MHz)
35	X2	O	
36, 37	—	—	Not used
38	POW-RY	O	AC power ON/OFF relay output
39	SP-RY	O	Speakers ON/OFF relay output
40	STR-OUT	O	Remote control signal outoput (inside)
41	CENTER EXT-SW	I	Center speaker internal/external select switch input “L”: internal, “H”: external
42	S/W VOL-CLK	O	Serial control output of super woofer volume IC
43	S/W VOL-DATA	O	
44	S/W VOL-CE	O	

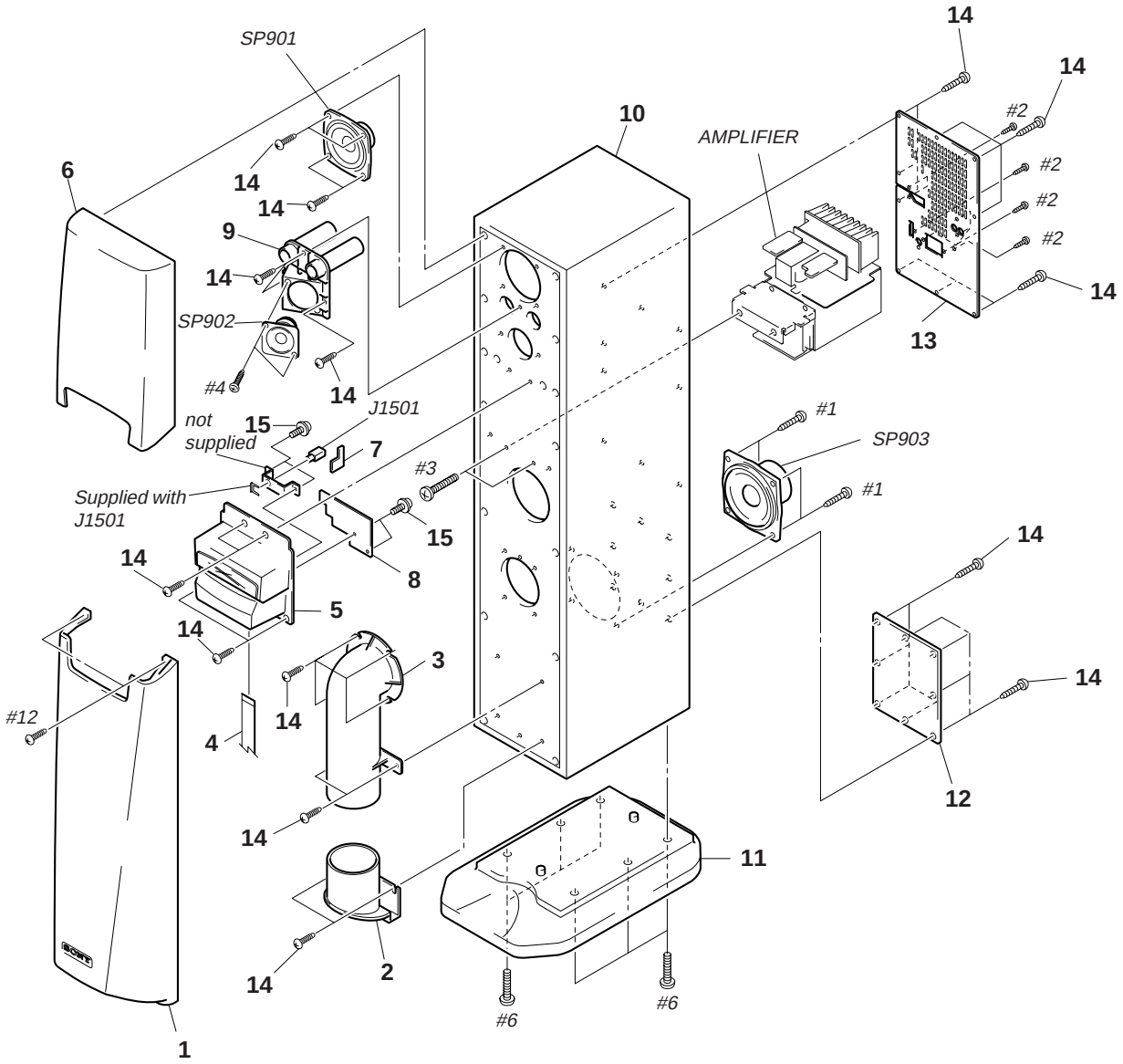
Pin No.	Pin Name	I/O	Function
45	S/W BOOST	O	Sub woofer boost control output “L” : ON
46	VOL SCL	O	Serial clock output to electrical volume IC
47	STR-IN	I	Remote control signal input (inside)
48	IC	—	Not used
49	—	—	
50	VOL SDA-1	O	Serial data output to electrical volume IC
51	VOL SDA-2	O	
52	VDD	—	+5V power supply
53 to 59	—	—	Not used
60	SP LED	O	LED drive output “H”: active
61	INT-CEN LED	O	
62	EXT-CEN LED	O	
63	OPERATE LED	O	
64	READY LED	O	
65 to 80	—	—	Not used

SECTION 7
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  AUS : Australian model

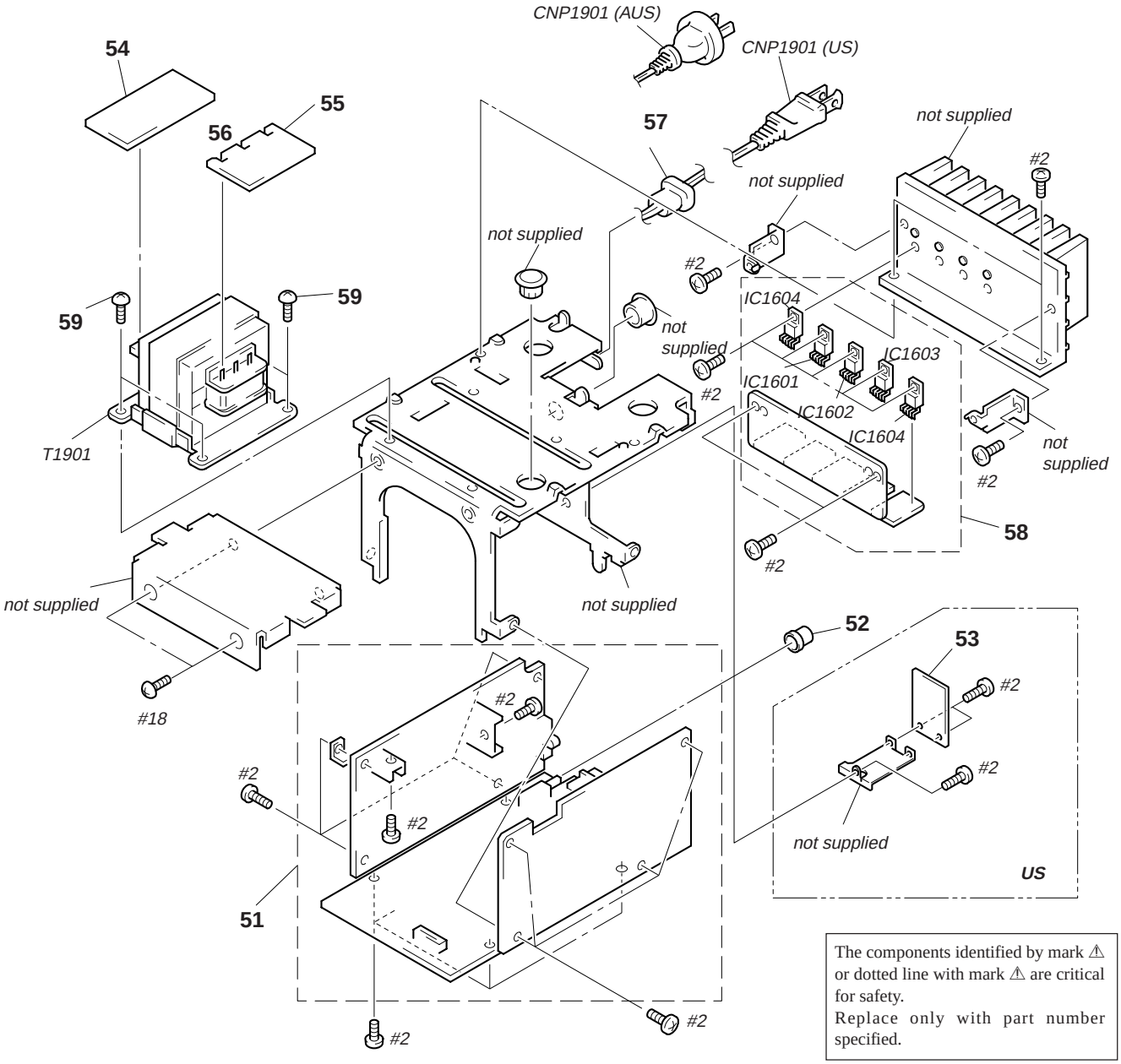
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. L-CH SPEAKER SYSTEM SECTION



Ref. No.	Part No.	Description	Remark
* 1	X-4947-403-1	PANEL (L) ASSY, FRONT	
* 2	4-981-837-01	DUCT (T)	
* 3	4-982-426-01	DUCT (C)	
4	1-769-950-11	WIRE (FLAT TYPE)(11 CORE)	
5	X-4947-141-1	PANEL ASSY (L), CONTROL	
6	X-4947-331-1	FRAME ASSY, GRILLE	
* 7	1-660-834-11	HP BOARD	
* 8	1-660-833-11	LED BOARD	
* 9	4-973-510-01	FRAME (L), TWEETER	
* 10	A-4384-213-A	CABINET (L) ASSY, SPEAKER	
11	4-957-274-01	BASE	
* 12	4-982-024-01	COVER (W)	
* 13	4-981-883-02	PANEL (L), BACK (US)	
* 13	4-981-883-12	PANEL (L), BACK (AUS)	
14	4-923-040-11	SCREW (4X16), TAPPING	
15	4-951-620-01	SCREW (2.6X8), +BVTP	
SP901	1-504-875-11	SPEAKER (10CM)(FRONT)	
SP902	1-504-874-11	SPEAKER (5CM)(CENTER)	
SP903	1-505-457-11	SPEAKER (16CM)(WOOFER)	

7-2. AMPLIFIER SECTION

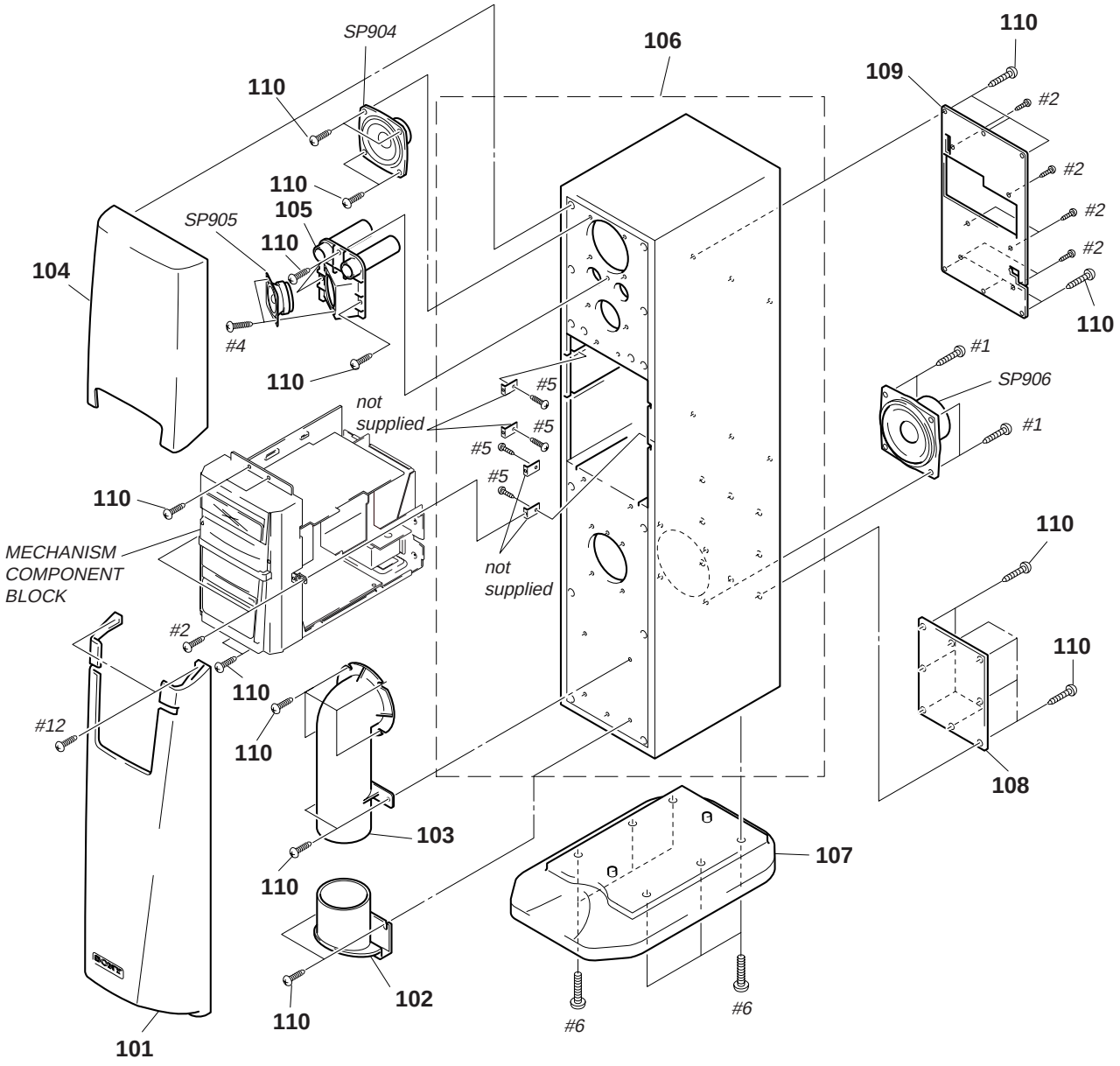


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 51	A-4390-752-A	SURR BOARD, COMPLETE (US)	
* 51	A-4403-347-A	SURR BOARD, COMPLETE (AUS)	
* 52	4-975-298-01	BUTTON (PUSH)	
* 53	1-663-751-11	REG BOARD	
* 54	1-660-823-11	T2 BOARD	
* 55	1-660-822-11	T1 BOARD	
* 57	3-703-244-00	BUSHING (2104), CORD	

Ref. No.	Part No.	Description	Remark
* 58	A-4390-751-A	POWER BOARD, COMPLETE	
59	4-381-962-11	SCREW +BVTT 4X8 (S)	
⚠CNP1901	1-575-042-21	CORD, POWER (US)	
⚠CNP1901	1-696-845-11	CORD, POWER (AUS)	
⚠T1901	1-429-633-11	TRANSFORMER, POWER (US)	
⚠T1901	1-431-327-11	TRANSFORMER, POWER (AUS)	

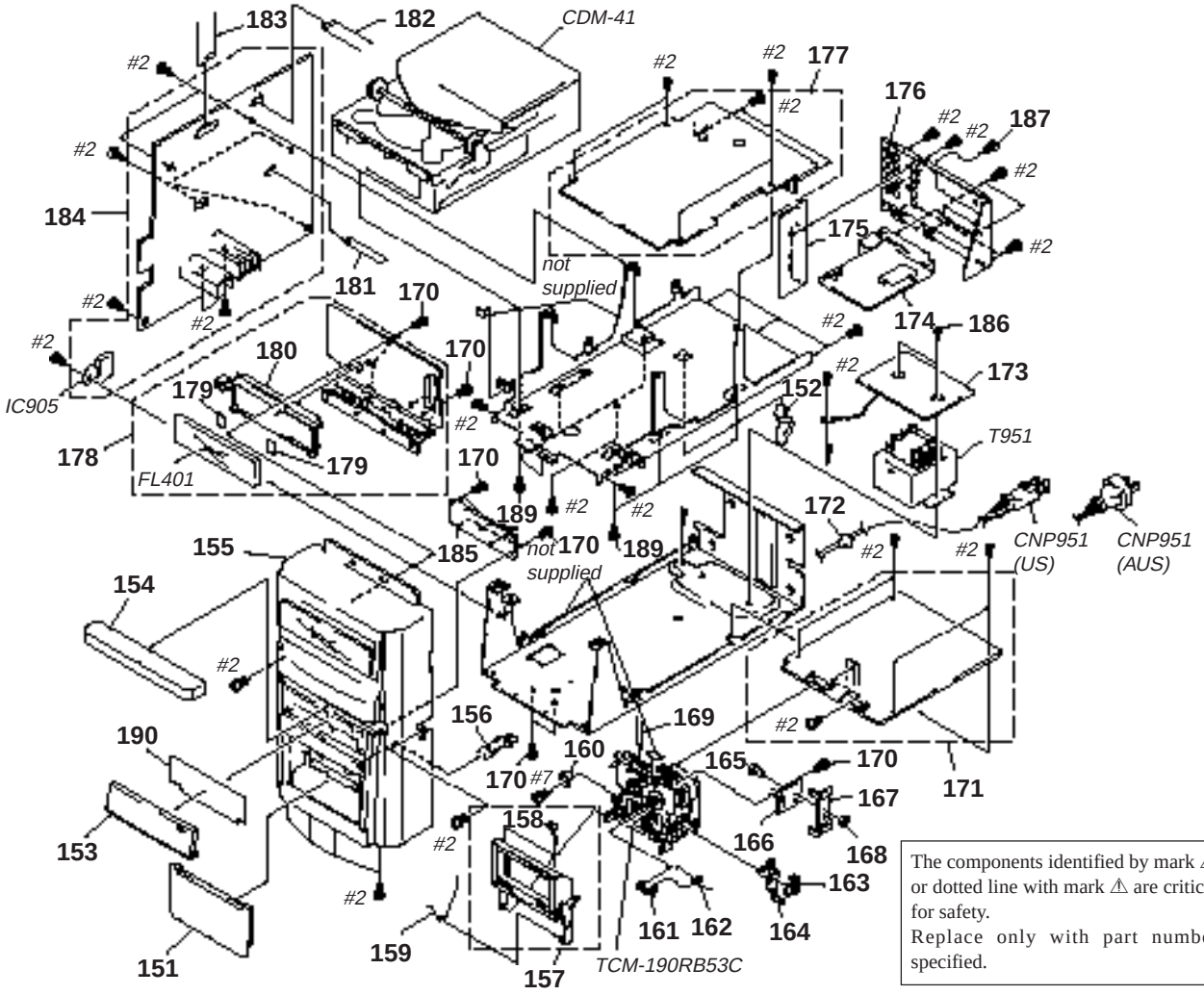
7-3. R-CH SPEAKER SYSTEM SECTION



Ref. No.	Part No.	Description	Remark
* 101	X-4947-404-1	PANEL (R) ASSY, FRONT	
* 102	4-981-837-01	DUCT (T)	
* 103	4-982-426-01	DUCT (C)	
104	X-4947-331-1	FRAME ASSY, GRILLE	
* 105	4-975-254-01	FRAME (R), TWEETER	
* 106	A-4384-214-A	CABINET (R) ASSY, SPEAKER	
107	4-957-274-01	BASE	

Ref. No.	Part No.	Description	Remark
* 108	4-982-024-01	COVER (W)	
* 109	4-981-882-01	PANEL (R), BACK (US)	
* 109	4-981-882-11	PANEL (R), BACK (AUS)	
110	4-923-040-11	SCREW (4X16), TAPPING	
SP904	1-504-875-11	SPEAKER (10CM)(FRONT)	
SP905	1-504-874-11	SPEAKER (5CM)(CENTER)	
SP906	1-505-457-11	SPEAKER (16CM)(WOOFER)	

7-4. MECHANISM COMPONENT SECTION

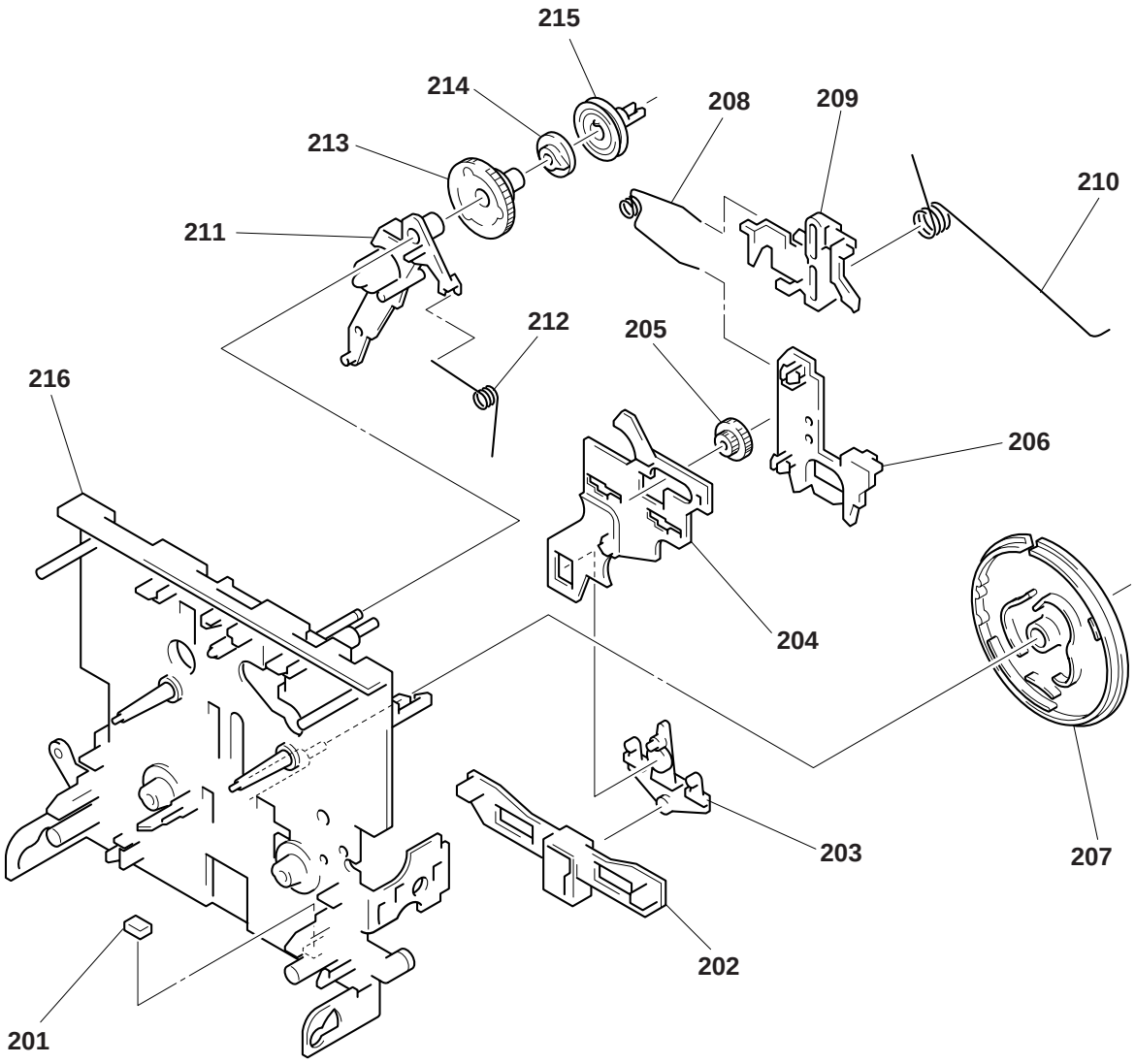


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	4-981-874-01	LID (TC)	
* 152	3-646-076-00	CLIP (7R), CABLE	
153	4-981-877-01	LID (MAIN)	
154	4-981-875-01	PANEL (CD), LOADING	
155	X-4947-142-1	PANEL ASSY (R), CONTROL	
156	4-981-870-01	BUTTON (EJECT)	
157	A-4325-164-A	HOLDER (R) ASSY, CASSETTE	
158	3-308-823-11	DETENT, CASSETTE	
159	3-354-960-01	SPRING (LOADING R), TORSION	
160	3-354-963-01	DAMPER	
161	3-354-956-07	LEVER (EJ SAFTY LEVER R)	
162	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
163	3-354-957-01	JOINT (LOCK LEVER)	
* 164	3-354-954-01	LEVER (LOCK LEVER R)	
* 165	4-981-886-01	SHAFT (EJECT)	
* 166	4-981-885-01	BASE (EJECT)	
* 167	4-981-884-01	LEVER (EJECT)	
168	3-558-708-21	WASHER, STOPPER	
169	1-769-882-11	WIRE (FLAT TYPE)(7 CORE)	
170	4-951-620-01	SCREW (2.6X8), +BVTP	
* 171	A-4390-755-A	TC BOARD, COMPLETE	
* 172	3-703-244-00	BUSHING (2104), CORD	
* 173	1-660-827-11	TRANS BOARD	
174	1-233-545-11	ENCAPSULATED COMPONENT (AUS)	

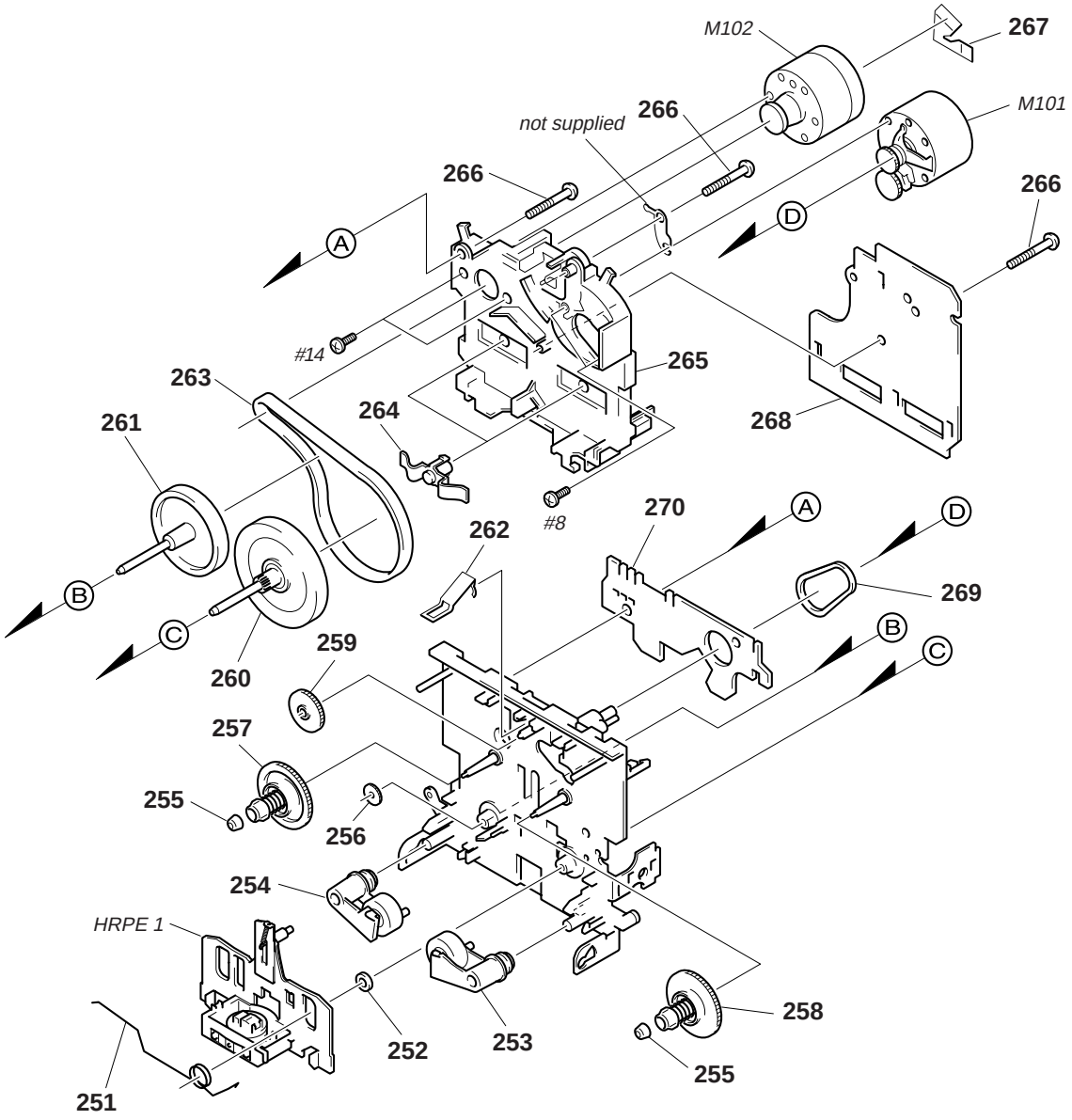
Ref. No.	Part No.	Description	Remark
174	1-233-544-11	ENCAPSULATED COMPONENT (US)	
* 175	A-4390-756-A	VIDEO BOARD, COMPLETE	
* 176	4-981-890-01	PLATE, JACK	
* 177	A-4390-758-A	CD BOARD, COMPLETE (US)	
* 177	A-4403-348-A	CD BOARD, COMPLETE (AUS)	
* 178	A-4390-748-A	FL BOARD, COMPLETE (US)	
* 178	A-4398-422-A	FL BOARD, COMPLETE (AUS)	
* 179	4-921-941-01	CUSHION (FL)	
* 180	4-974-459-01	HOLDER (FL)	
181	1-769-848-11	WIRE (FLAT TYPE)(5 CORE)	
182	1-690-589-31	WIRE (FLAT TYPE)(13 CORE)	
183	1-773-302-11	WIRE (FLAT TYPE)(29 CORE)	
* 184	A-4390-759-A	MAIN BOARD, COMPLETE	
* 185	A-4390-749-A	KEY (2) BOARD, COMPLETE	
186	4-381-962-11	SCREW +BVTT 4X8 (S)	
187	4-909-982-11	SCREW, TAPPING	
189	4-985-947-01	SCREW, CDM	
190	4-986-117-01	PLATE (LID), ORNAMENTAL	
FL401	1-517-551-11	INDICATOR TUBE, FLUORESCENT	
⚠ T951	1-429-632-11	TRANSFORMER, POWER (US)	
⚠ T951	1-431-439-11	TRANSFORMER, POWER (AUS)	
⚠ CNP951	1-575-042-21	CORD, POWER (US)	
⚠ CNP951	1-696-845-11	CORD, POWER (AUS)	

7-5. TC MECHANISM SECTION 1 (TCM-190RB53C)



Ref. No.	Part No.	Description	Remark
201	3-359-469-01	SPACER	
202	3-359-425-01	SLIDER (REVERSE SLIDER)	
203	3-359-426-01	LEVER (REVERSE LEVER)	
204	3-359-415-11	SLIDER (TRIGGER SLIDER)	
205	3-359-448-01	GEAR (TRIGGER)	
206	3-359-427-01	SLIDER (LEVERSE SLIDER)	
207	3-936-483-01	GEAR (CAM GEAR)	
208	3-359-454-01	SPRING, TORSION	
209	3-359-429-11	SLIDER (BRAKE PLATE)	
210	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
211	X-3366-569-1	ARM ASSY, FR	
212	3-924-185-11	SPRING (FR ARM), TORSION	
213	3-359-419-11	GEAR (FR GEAR)	
214	3-359-421-01	CLUTCH (REEL DISK)	
215	3-359-418-01	PULLEY (FR PULLEY)	
216	X-3363-790-1	CHASSIS ASSY, MECHANICAL	

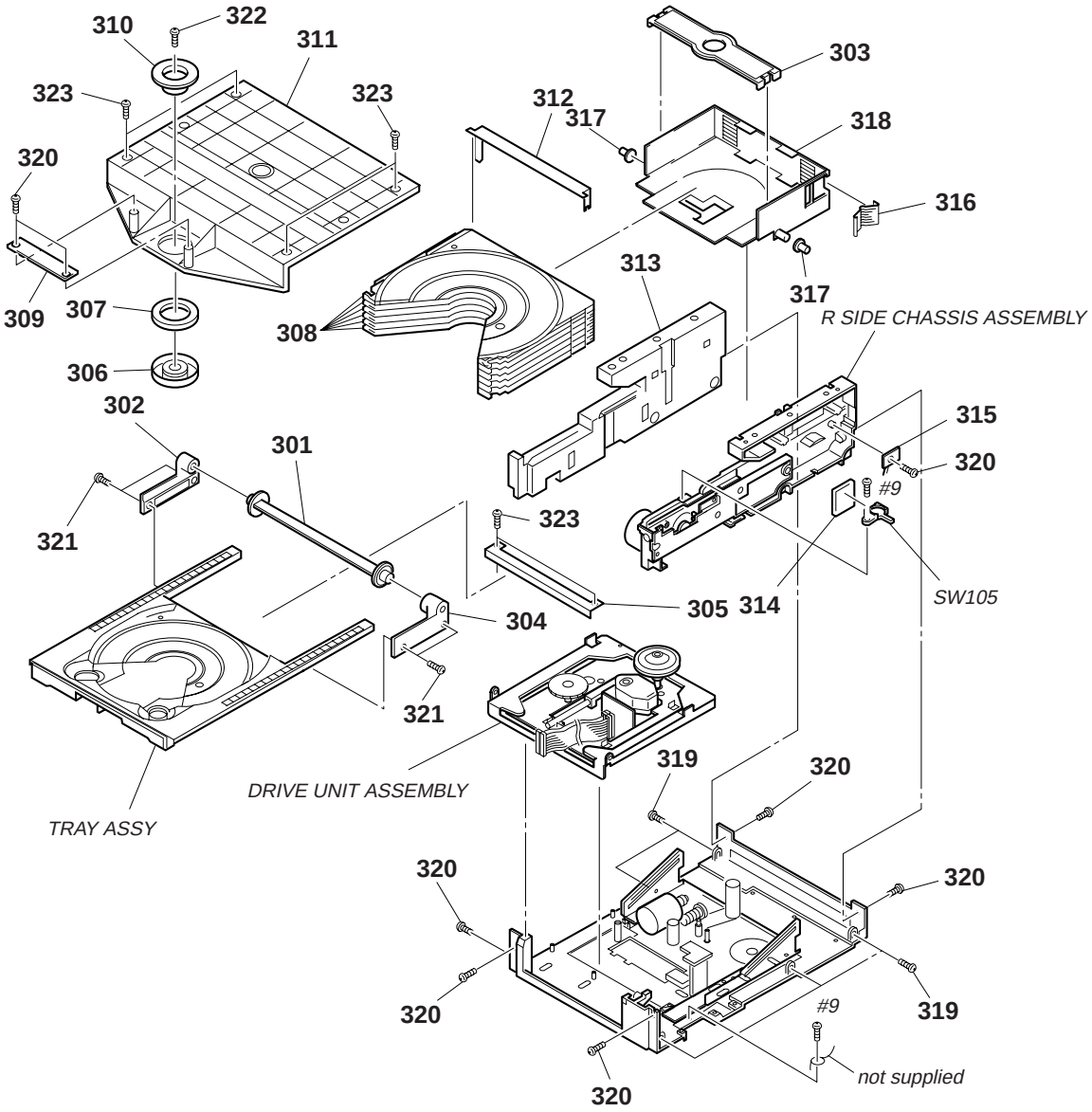
7-6. TC MECHANISM SECTION 2 (TCM-190RB53C)



Ref. No.	Part No.	Description	Remark
251	3-907-362-01	SPRING, TORSION	
252	3-356-713-01	WASHER	
253	X-3366-047-1	LEVER (PINCH F) ASSY	
254	X-3366-048-1	LEVER (PINCH R) ASSY	
255	3-362-308-01	CAP (REEL)	
256	3-356-714-01	WASHER	
257	X-3366-971-1	TABLE ASSY (B), REEL	
258	X-3366-970-1	TABLE ASSY, REEL	
259	3-359-424-01	GEAR (REV GEAR)	
260	X-3367-629-1	FLYWHEEL (FWD) ASSY	
261	X-3367-630-1	FLYWHEEL (REV) ASSY	
262	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF	

Ref. No.	Part No.	Description	Remark
263	3-359-417-01	BELT (FLAT), CAPSTAN	
264	3-575-321-00	RETAINER, THRUST, CAPSTAN	
265	3-359-436-11	BASE (THRUST RETAINER),FITTING	
266	3-359-414-01	SCREW (+PTPWH 2X23)	
267	1-638-983-11	MOTOR FLEXIBLE BOARD	
* 268	A-2007-134-A	AUDIO BOARD, COMPLETE	
269	3-359-466-01	BELT (FR), SQUARE	
* 270	1-638-020-11	LEAF SW BOARD	
HRPE1	A-2004-527-A	DECK ASSY, HEAD	
M101	X-3365-377-2	MOTOR ASSY (REEL)	
M102	X-3363-501-2	MOTOR ASSY (CAPSTAN)	

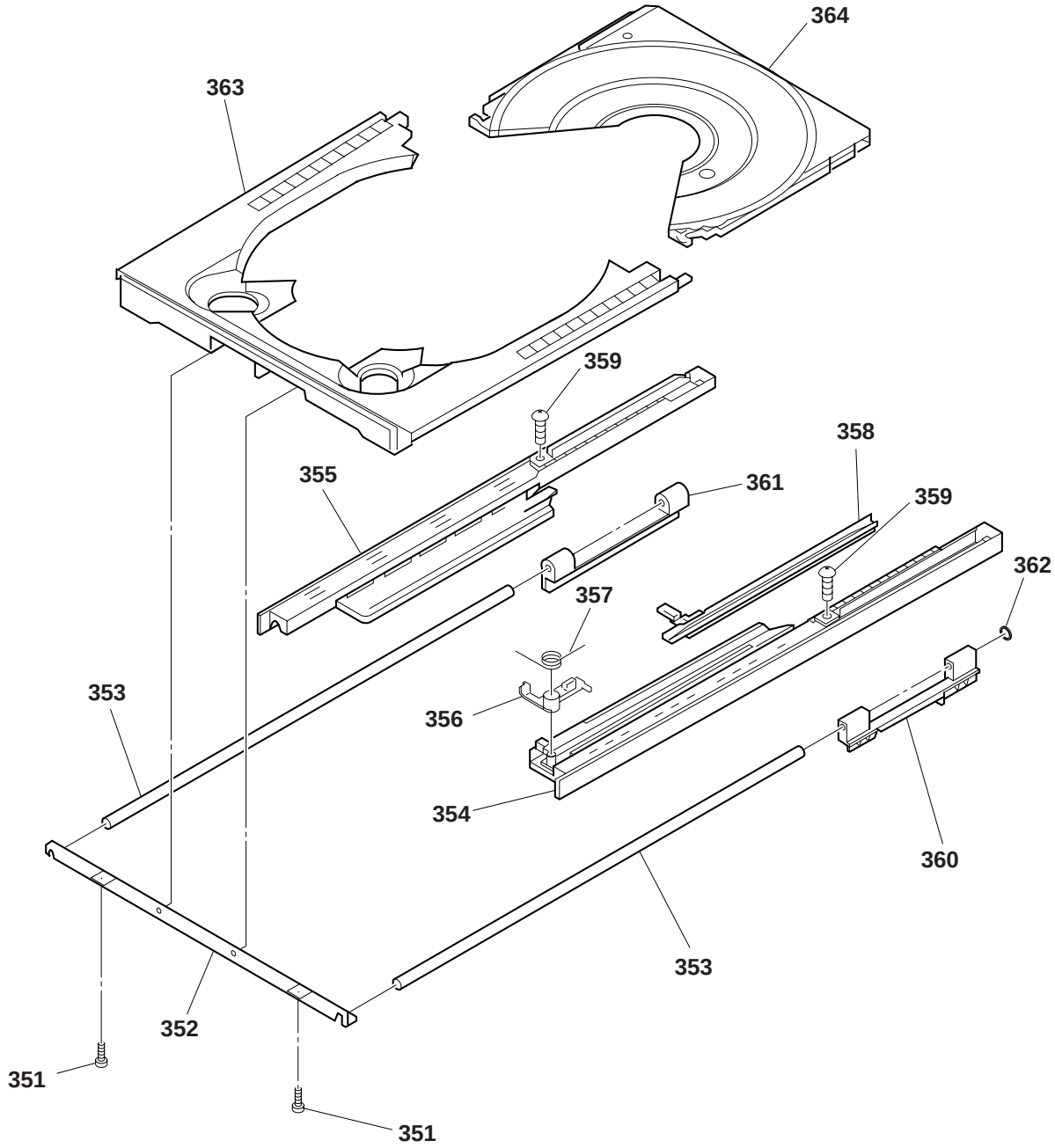
7-7. CD MECHANISM SECTION 1 (CDM-41)



Ref. No.	Part No.	Description	Remark
301	X-4947-444-1	SHAFT ASSY, TIMING	
302	4-984-225-01	HOLDER (L), TRAY	
303	4-984-306-01	STOCKER	
304	4-984-226-01	HOLDER (R), TRAY	
305	4-984-229-01	STOPPER, MECHA B	
306	4-984-304-01	CLAMPER (LO)	
307	4-984-303-01	MAG (AW), CLAMPER	
308	4-984-230-01	CARRIAGE-N	
* 309	1-662-189-11	OVER SW BOARD	
310	4-984-305-01	CLAMPER (H1)	
311	4-988-986-01	COVER, TOP	
312	4-984-227-01	ARM, ASSIST	

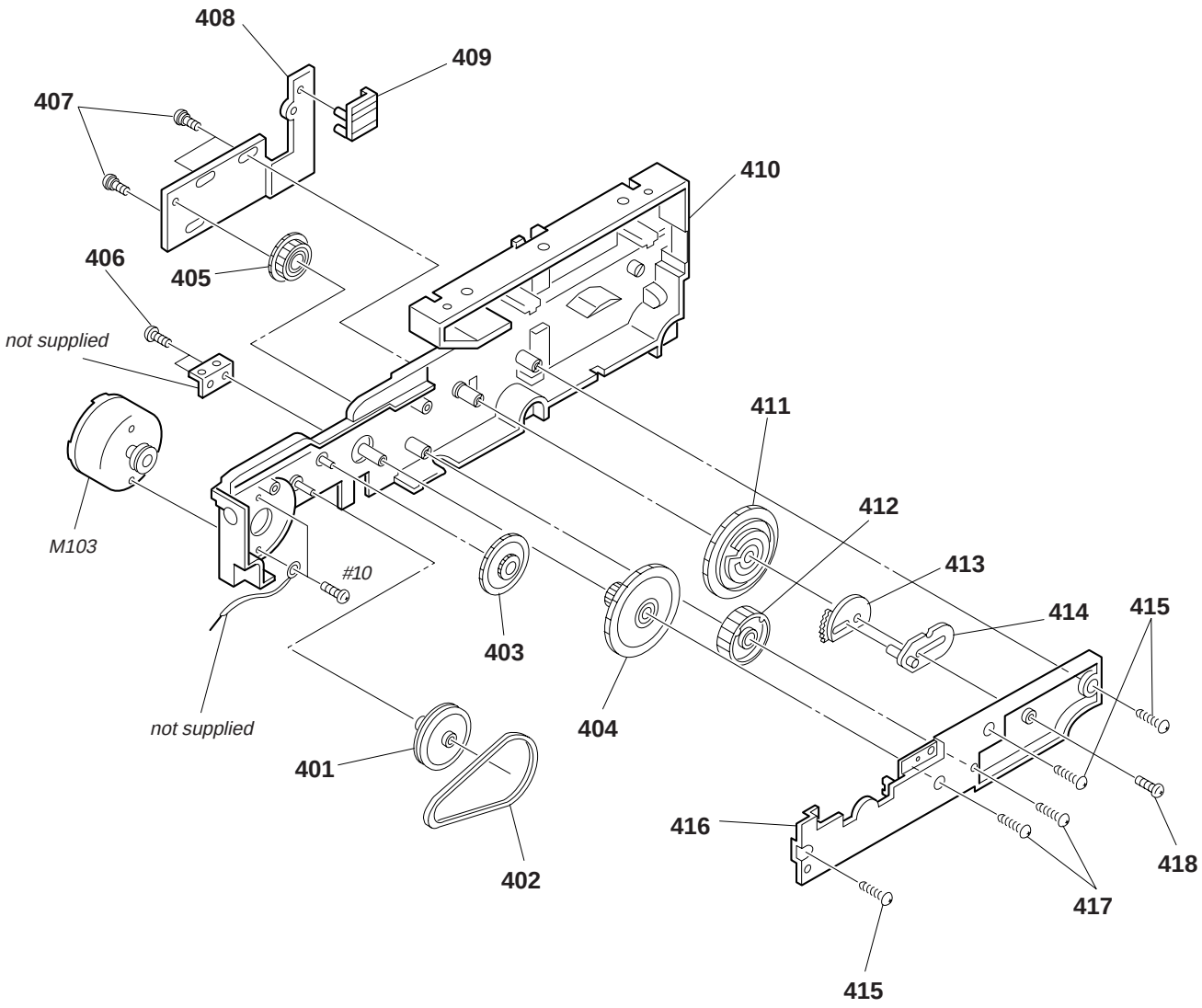
Ref. No.	Part No.	Description	Remark
* 313	4-984-228-01	CHASSIS (L), SIDE	
* 314	1-662-231-11	OP/CL SW BOARD	
* 315	1-662-230-11	STORE BOARD	
316	4-984-307-01	SPRING, CARRIAGE	
317	4-984-232-01	PIN, STC GUIDE	
318	X-4947-454-1	FRAME ASSY	
319	4-985-840-01	SCREW (2.6X10)(+B)(B TIGHT)	
320	4-985-833-01	SCREW (2X5)(+B)(P TIGHT)	
321	4-985-839-01	SCREW (2.6X11)(+B)(B TIGHT)	
322	4-985-826-01	SCREW (2.6X6)(+B)(P TIGHT)	
323	4-985-836-01	SCREW (2.6X8)(+B)(B TIGHT)	

7-8. CD MECHANISM SECTION 2 (TRAY ASSEMBLY) (CDM-41)



Ref. No.	Part No.	Description	Remark
351	4-985-833-01	SCREW (2X5)(+B)(P TIGHT)	
* 352	4-984-297-01	PLATE, TRAY	
353	4-984-294-01	TR-G-SHAFT	
354	4-984-290-01	TRAY (R)	
355	4-984-291-01	TRAY (L)	
356	4-984-292-01	LOCK, SHUTILE	
357	4-984-293-01	LOCK (SP), SHUTILE	
358	4-984-298-01	SHUTTLE	
359	4-985-842-01	SCREW (2X4)(+B)(P TIGHT)	
360	4-984-295-01	GUIDE (R), TRAY	
361	4-984-296-01	GUIDE (L), TRAY	
362	4-984-299-01	RUBBER, STOP	
363	4-984-289-01	TRAY (TOP)	
364	4-984-230-01	CARRIAGE-N	

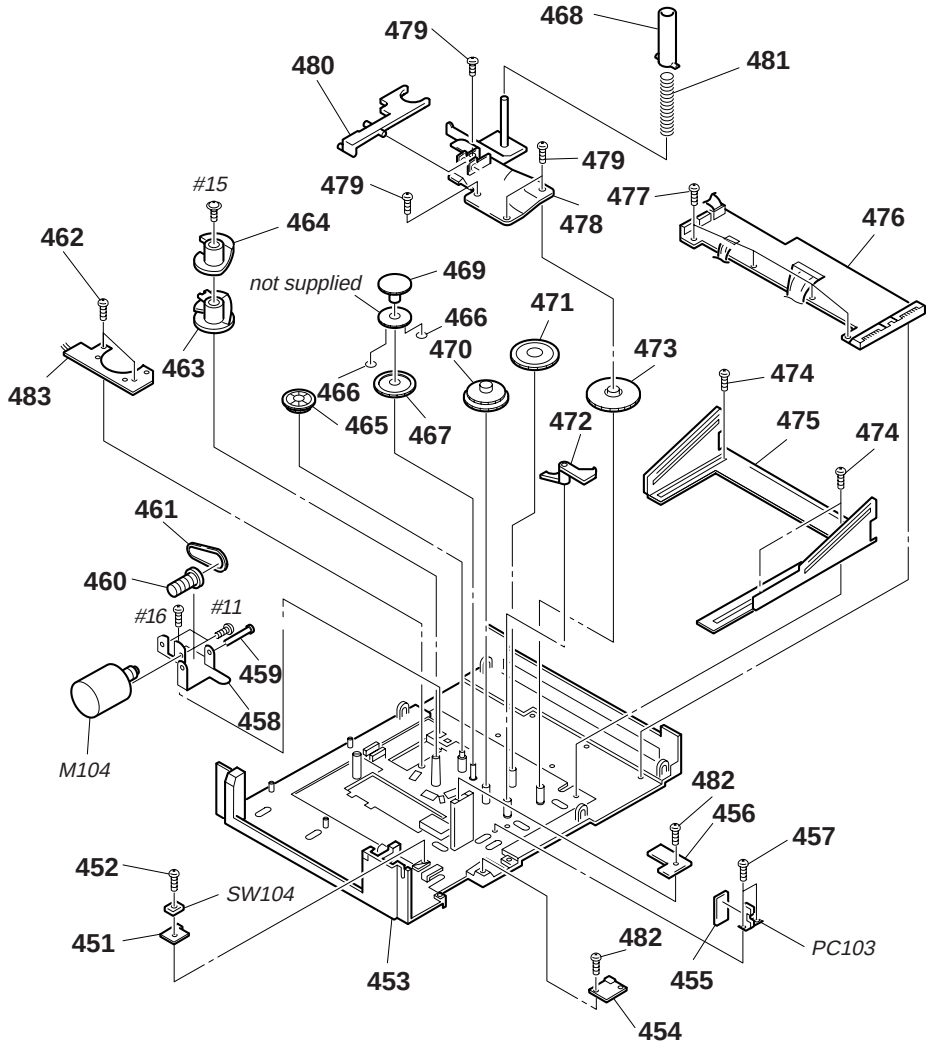
7-9. CD MECHANISM SECTION 3 (R SIDE CHASSIS ASSEMBLY) (CDM-41)



Ref. No.	Part No.	Description	Remark
401	4-984-260-01	S-P-GEAR	
402	4-984-261-01	BELT (C-S)	
403	4-984-262-01	IDLER, SIDE	
404	4-984-263-01	S-F-GEAR	
405	4-984-269-01	GEAR, CHANGE	
406	4-985-844-01	SCREW (2.6X8) FLAT (P TIGHT)	
407	4-985-841-01	SCREW (BT)(2.0X1.2X7.2), STEP	
408	X-4947-451-1	PLATE ASSY, CHANGE	
409	4-984-270-01	CARRIAGE (OPENNER)	
410	X-4947-448-1	CHASSIS (R) ASSY, SIDE	

Ref. No.	Part No.	Description	Remark
411	4-984-265-01	S-M-GEAR	
412	4-984-264-01	S-I-GEAR	
413	4-984-266-01	STOPPER, TRAY	
414	X-4947-450-1	ARM ASSY, TRACE	
415	4-985-836-01	SCREW (2.6X8)(+B)(B TIGHT)	
416	4-984-267-01	HOLDER, GEAR	
417	4-985-837-01	SCREW (2X10)(+B)(P TIGHT)	
418	4-985-838-01	SCREW (2X4)(+P)(W CORNER)	
M103	X-4947-449-1	MOTOR ASSY, LOADING (LOADING)	

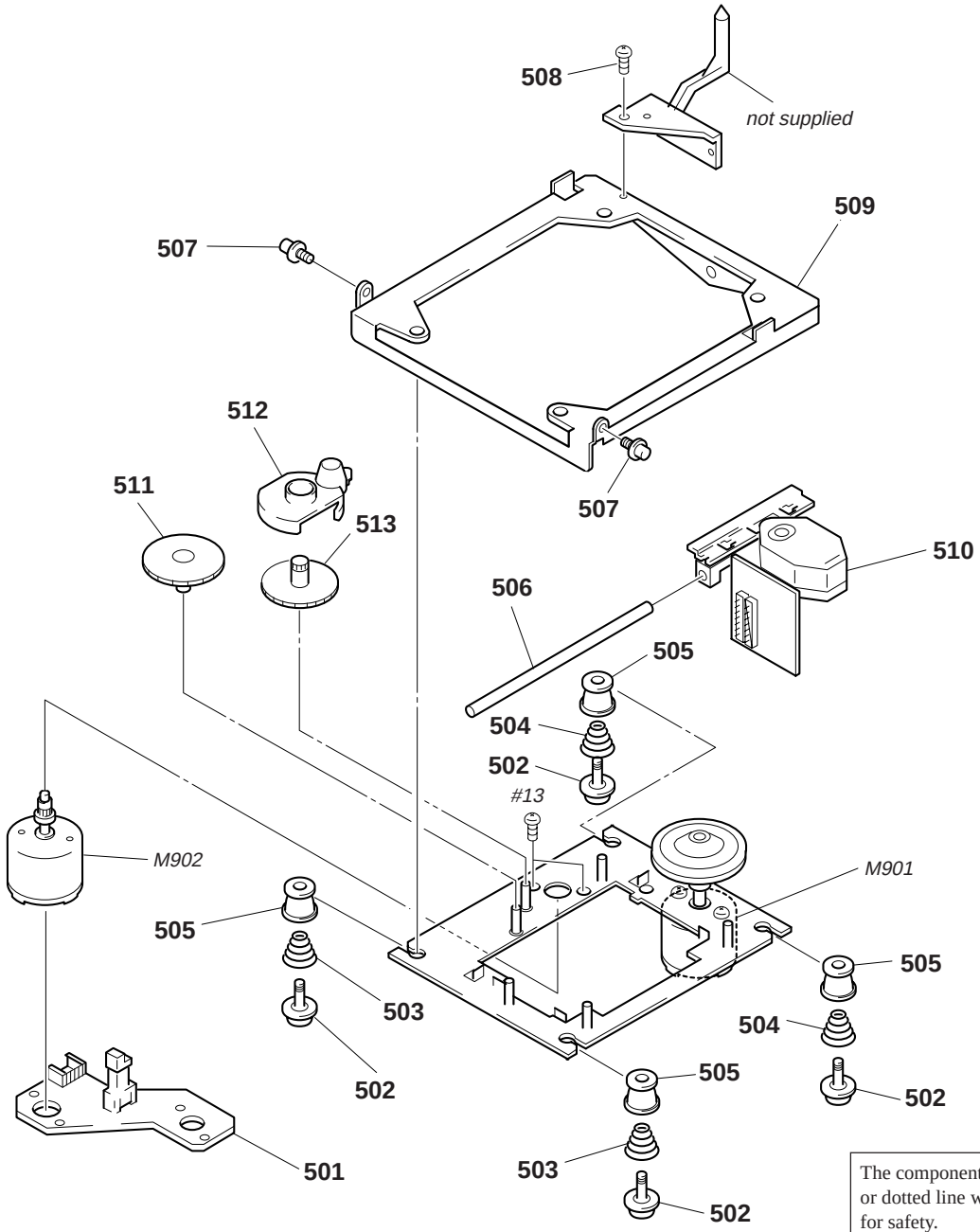
7-10. CD MECHANISM SECTION 4 (MAIN CHASSIS ASSEMBLY) (CDM-41)



Ref. No.	Part No.	Description	Remark
* 451	1-662-187-11	HPOS SW BOARD	
452	4-985-832-01	SCREW (1.7X8)(TOUCH LOCK)	
* 453	X-4947-445-1	CHASSIS ASSY, MAIN	
* 454	1-662-185-11	CTR SENSOR BOARD	
* 455	1-662-186-11	DCNT SENSOR BOARD	
* 456	1-662-190-11	DDET SENSOR BOARD	
457	4-985-835-01	SCREW (2.6X4)(+B)(P TIGHT)	
* 458	4-984-244-01	BRACKET, MOTOR	
* 459	4-984-245-01	SHAFT, WORM	
460	4-984-246-01	GEAR, ST WORM	
461	4-984-247-01	BELT (T-C)	
462	4-985-828-01	SCREW (1.7X5)(TOUCH LOCK)	
463	4-984-240-01	CAM, MECHA (UD)	
464	4-984-241-01	CAM (TOP), ME (UD)	
465	4-984-233-01	ID-ST-GEAR	
466	4-984-250-01	D3-ST-GEAR	
467	4-984-252-01	D5-ST-GEAR	

Ref. No.	Part No.	Description	Remark
468	4-984-257-01	PIN, DISK LOCK	
469	4-984-249-01	D1-ST-GEAR	
470	4-984-234-01	IDLER, LOCK	
471	4-984-235-01	D7M-ST-GEAR	
472	4-984-238-01	ARM, CHANGE	
473	4-984-237-01	D6P-ST-GEAR	
474	4-985-830-01	SCREW (BT 2.6-1.4-7.6), STEP	
475	4-984-236-01	CAM, STOCKER	
* 476	1-662-184-11	MAIN BOARD (CDM)	
477	4-985-834-01	SCREW (1.7X4)(TOUCH LOCK)	
478	4-984-259-01	BASE, DISK LOCK	
479	4-985-827-01	SCREW (2X8)(+B)(P TIGHT)	
480	4-984-255-01	ARM, DISK LOCK	
481	4-984-258-01	LOCK (SP), DISK	
482	4-985-833-01	SCREW (2X5)(+B)(P TIGHT)	
* 483	1-662-188-11	POS SW BOARD	
M104	X-4947-446-1	MOTOR ASSY, STOCKER (STOCKER)	

7-11. CD MECHANISM SECTION 5 (DRIVE UNIT ASSEMBLY) (CDM-41)

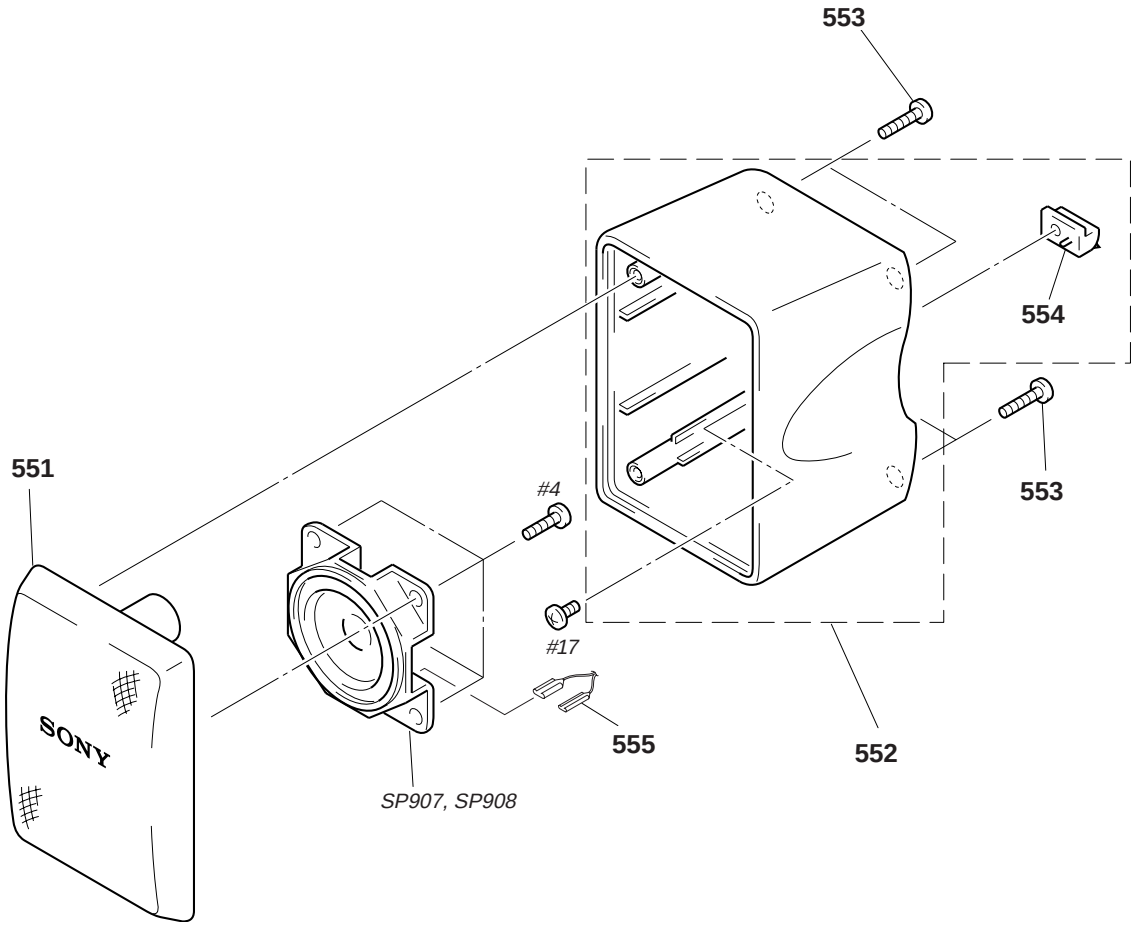


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 501	1-639-678-12	MOTOR (6P)(S) BOARD	
502	4-985-824-01	SCREW (M2-3-9 AW), STEP	
503	4-984-282-01	MACHA (SP)(R)	
504	4-984-281-01	MACHA (SP)(F)	
505	4-984-280-01	MECHA (SUS)	
506	4-917-565-01	SHAFT (S), SLED	
507	4-984-284-01	PIN, SHAFT	
508	4-985-833-01	SCREW (2X5)(+B)(P TIGHT)	

Ref. No.	Part No.	Description	Remark
509	X-4947-453-1	CHASSIS ASSY, SUS	
⚠510	8-848-263-21	OPTICAL PICK-UP KSM-2101BBM(S)	
511	2-625-188-02	GEAR (A)(S)	
512	2-625-477-01	RING (LO)(S), CDENTER	
513	2-626-081-01	GEAR (B)	
M901	X-2625-133-1	T.T CHASSIS ASSY (MB)(SPINDLE)	
M902	X-2625-132-1	MOTOR GEAR ASSY (MB)(SLED)	

7-12. REAR SPEAKER SYSTEM SECITON (SS-SR151)



Ref. No.	Part No.	Description	Remark
551	X-4945-978-1	PANEL ASSY, FRONT	
552	X-4947-156-1	CABINET ASSY, SPEAKER	
553	4-929-125-01	SCREW (M4X16), TAPPING	
554	1-537-775-11	TERMINAL BOARD	

Ref. No.	Part No.	Description	Remark
555	1-765-663-11	CORD	
SP907	1-504-877-11	SPEAKER (8CM)(SURROUND)	
SP908	1-504-877-11	SPEAKER (8CM)(SURROUND)	

AUDIO

SECTION 8
ELECTRICAL PARTS LIST

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  AUS : Australian model

Ref. No.	Part No.	Description				Remark
*	A-2007-134-A	AUDIO BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C12	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C13	1-136-153-00	FILM	0.01uF	5%	50V	
C14	1-126-177-11	ELECT	100uF	20%	10V	
C15	1-124-234-00	ELECT	22uF	20%	16V	
C16	1-136-273-91	FILM	75PF	5%	630V	
C17	1-102-113-00	CERAMIC	390PF	10%	50V	
C18	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C22	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C23	1-136-153-00	FILM	0.01uF	5%	50V	
C24	1-126-177-11	ELECT	100uF	20%	10V	
C25	1-124-234-00	ELECT	22uF	20%	16V	
C26	1-136-273-91	FILM	75PF	5%	630V	
C27	1-102-113-00	CERAMIC	390PF	10%	50V	
C28	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C31	1-124-234-00	ELECT	22uF	20%	16V	
C32	1-124-234-00	ELECT	22uF	20%	16V	
C33	1-124-234-00	ELECT	22uF	20%	16V	
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C53	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C54	1-136-559-11	FILM	0.0047uF	5%	630V	
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C57	1-164-346-11	CERAMIC CHIP	1uF		16V	
C58	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V	
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V	
		< CONNECTOR >				
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD				
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD				
CNJ72	1-764-902-11	CONNECTOR, FFC/FPC 4P				
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P				
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P				
		< IC >				
IC31	8-759-249-21	IC uPC1330AGR				
IC32	8-759-711-85	IC NJM4580E-D				

Ref. No.	Part No.	Description				Remark
		< JUMPER RESISTOR >				
JW1	1-216-295-91	CONDUCTOR, CHIP (2012)				
JW2	1-216-295-91	CONDUCTOR, CHIP (2012)				
JW11	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW12	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW13	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW14	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW15	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW16	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW17	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW18	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW19	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW20	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW21	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW22	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW23	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW24	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW25	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW26	1-216-296-91	CONDUCTOR, CHIP (3216)				
JW27	1-216-296-91	CONDUCTOR, CHIP (3216)				
		< COIL >				
L11	1-410-780-11	INDUCTOR 27mH				
L21	1-410-780-11	INDUCTOR 27mH				
		< TRANSISTOR >				
Q51	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q52	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q53	8-729-111-29	TRANSISTOR 2SD1616A-K				
Q71	8-729-216-22	TRANSISTOR 2SA1162-G				
		< RESISTOR >				
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R12	1-216-033-00	METAL CHIP	220	5%	1/10W	
R13	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R14	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R15	1-216-107-00	METAL CHIP	270K	5%	1/10W	
⚠R16	1-249-430-11	CARBON	12K	5%	1/4W	
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R22	1-216-033-00	METAL CHIP	220	5%	1/10W	
R23	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R24	1-216-075-00	METAL CHIP	12K	5%	1/10W	

Ref. No.	Part No.	Description			Remark
R25	1-216-107-00	METAL CHIP	270K	5%	1/10W
⚠R26	1-249-430-11	CARBON	12K	5%	1/4W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R33	1-216-073-00	METAL CHIP	10K	5%	1/10W
⚠R41	1-249-393-11	CARBON	10	5%	1/4W F
⚠R42	1-249-393-11	CARBON	10	5%	1/4W F
R51	1-216-075-00	METAL CHIP	12K	5%	1/10W
R52	1-216-075-00	METAL CHIP	12K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-761-11	RES, ADJ, CARBON 1K			
RV12	1-238-551-11	RES, ADJ, CARBON 220K			
RV21	1-241-761-11	RES, ADJ, CARBON 1K			
RV22	1-238-551-11	RES, ADJ, CARBON 220K			
RV71	1-241-630-11	RES, ADJ, CARBON 10K			
RV72	1-241-630-11	RES, ADJ, CARBON 10K			
		< TRANSFORMER >			
T51	1-406-419-11	COIL, BIAS OSCILLATION			
**********					
*	A-4390-758-A	CD BOARD, COMPLETE (US)			
		**********			
*	A-4403-348-A	CD BOARD, COMPLETE (AUS)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C101	1-104-664-11	ELECT	47uF	20%	10V
C102	1-162-294-31	CERAMIC	0.001uF	10%	50V
C103	1-124-443-00	ELECT	100uF	20%	10V
C104	1-164-159-11	CERAMIC	0.1uF		50V
C105	1-164-159-11	CERAMIC	0.1uF		50V
C106	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C107	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C108	1-162-306-11	CERAMIC	0.01uF	30%	16V
C109	1-162-306-11	CERAMIC	0.01uF	30%	16V
C110	1-136-159-00	FILM	0.033uF	5%	50V
C111	1-164-159-11	CERAMIC	0.1uF		50V
C112	1-164-159-11	CERAMIC	0.1uF		50V
C113	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C114	1-136-173-00	FILM	0.47uF	5%	50V
C115	1-104-664-11	ELECT	47uF	20%	10V

Ref. No.	Part No.	Description			Remark
C116	1-130-472-00	MYLAR	0.0012uF	5%	50V
C117	1-136-173-00	FILM	0.47uF	5%	50V
C118	1-164-159-11	CERAMIC	0.1uF		50V
C119	1-164-159-11	CERAMIC	0.1uF		50V
C120	1-124-907-11	ELECT	10uF	20%	50V
C121	1-164-159-11	CERAMIC	0.1uF		50V
C122	1-162-306-11	CERAMIC	0.01uF	30%	16V
C123	1-164-159-11	CERAMIC	0.1uF		50V
C124	1-104-664-11	ELECT	47uF	20%	10V
C125	1-162-306-11	CERAMIC	0.01uF	30%	16V
C126	1-164-159-11	CERAMIC	0.1uF		50V
C127	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C128	1-162-291-31	CERAMIC	560PF	10%	50V
C129	1-164-159-11	CERAMIC	0.1uF		50V
C130	1-136-171-00	FILM	0.33uF	5%	50V
C131	1-164-159-11	CERAMIC	0.1uF		50V
C132	1-161-494-00	CERAMIC	0.022uF		25V
C133	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C134	1-124-903-11	ELECT	1uF	20%	50V
C135	1-162-282-31	CERAMIC	100PF	10%	50V
C136	1-136-173-00	FILM	0.47uF	5%	50V
C137	1-136-153-00	FILM	0.01uF	5%	50V
C138	1-124-443-00	ELECT	100uF	20%	10V
C139	1-164-027-11	CERAMIC	22PF	5%	50V
C140	1-164-056-11	CERAMIC	27PF	5%	50V
C141	1-164-159-11	CERAMIC	0.1uF		50V
C142	1-164-159-11	CERAMIC	0.1uF		50V
C143	1-164-159-11	CERAMIC	0.1uF		50V
C144	1-164-159-11	CERAMIC	0.1uF		50V
C145	1-124-907-11	ELECT	10uF	20%	50V
C146	1-124-907-11	ELECT	10uF	20%	50V
C147	1-162-294-31	CERAMIC	0.001uF	10%	50V
C148	1-162-294-31	CERAMIC	0.001uF	10%	50V
C149	1-124-903-11	ELECT	1uF	20%	50V
C150	1-164-159-11	CERAMIC	0.1uF		50V
C151	1-124-903-11	ELECT	1uF	20%	50V
C152	1-124-472-11	ELECT	470uF	20%	10V
C153	1-124-907-11	ELECT	10uF	20%	50V
C154	1-164-054-11	CERAMIC	22PF	5%	50V
C157	1-124-907-11	ELECT	10uF	20%	50V
C158	1-124-903-11	ELECT	1uF	20%	50V
C160	1-162-294-31	CERAMIC	0.001uF	10%	50V (AUS)
C161	1-124-907-11	ELECT	10uF	20%	50V
C162	1-124-907-11	ELECT	10uF	20%	50V
C163	1-136-154-00	FILM	0.012uF	5%	50V
C164	1-137-366-11	FILM	0.0022uF	5%	50V
C165	1-136-154-00	FILM	0.012uF	5%	50V
C166	1-137-366-11	FILM	0.0022uF	5%	50V
C167	1-124-907-11	ELECT	10uF	20%	50V
C168	1-124-907-11	ELECT	10uF	20%	50V
C169	1-130-481-00	MYLAR	0.0068uF	5%	50V
C170	1-130-481-00	MYLAR	0.0068uF	5%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

CD

Ref. No.	Part No.	Description			Remark
C171	1-124-472-11	ELECT	470uF	20%	10V
C172	1-164-159-11	CERAMIC	0.1uF		50V
C173	1-124-443-00	ELECT	100uF	20%	10V
C176	1-164-159-11	CERAMIC	0.1uF		50V
C177	1-124-907-11	ELECT	10uF	20%	50V
C178	1-124-907-11	ELECT	10uF	20%	50V
C179	1-164-159-11	CERAMIC	0.1uF		50V
C180	1-124-472-11	ELECT	470uF	20%	10V
C181	1-126-963-11	ELECT	4.7uF	20%	50V
C182	1-124-903-11	ELECT	1uF	20%	50V
C183	1-104-666-11	ELECT	220uF	20%	25V
C184	1-164-159-11	CERAMIC	0.1uF		50V
C185	1-124-472-11	ELECT	470uF	20%	10V
C186	1-124-472-11	ELECT	470uF	20%	10V
C187	1-104-666-11	ELECT	220uF	20%	25V
C188	1-164-159-11	CERAMIC	0.1uF		50V
C189	1-124-907-11	ELECT	10uF	20%	50V
C190	1-104-905-11	CAPACITOR	0.22F		5.5V
C193	1-162-282-31	CERAMIC	100PF	10%	50V
C196	1-164-159-11	CERAMIC	0.1uF		50V
C197	1-164-159-11	CERAMIC	0.1uF		50V
C199	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
* CN101	1-564-523-11	PLUG, CONNECTOR 8P			
CN102	1-564-523-11	PLUG, CONNECTOR 8P			
* CN103	1-564-519-11	PLUG, CONNECTOR 4P			
* CN104	1-564-521-11	PLUG, CONNECTOR 6P			
* CN105	1-564-527-11	PLUG, CONNECTOR 12P			
CN106	1-770-407-11	CONNECTOR, BOARD TO BOARD 12P			
CN107	1-770-407-11	CONNECTOR, BOARD TO BOARD 12P			
		< DIODE >			
D101	8-719-987-63	DIODE 1N4148M			
D103	8-719-987-63	DIODE 1N4148M			
D108	8-719-933-36	DIODE HZS6B1L			
D109	8-719-933-50	DIODE HZS7C2L			
		< GROUND TERMINAL >			
* EB101	1-537-738-21	TERMINAL, EARTH			
* EB102	1-537-738-21	TERMINAL, EARTH			
		< IC >			
IC101	8-752-069-56	IC CXA1782BQ			
IC102	8-759-393-45	IC BA6397FP-E2			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
IC105	8-759-634-51	IC M5218AP			
IC106	8-759-397-03	IC uPD78058GC-225-3B9			
IC107	8-759-165-82	IC PST600E-T			
IC108	8-759-802-32	IC LB1649			
IC109	8-759-000-58	IC MC14093BCP			
IC110	8-759-374-80	IC LC3564S-10			

Ref. No.	Part No.	Description			Remark
IC111	8-759-604-32	IC M5F7810			
IC112	8-759-634-51	IC M5218AP			
		< COIL >			
L101	1-410-397-21	FERRITE BEAD INDUCTOR			
L104	1-410-397-21	FERRITE BEAD INDUCTOR			
L105	1-410-397-21	FERRITE BEAD INDUCTOR			
L106	1-408-080-00	INDUCTOR 100uH			
L107	1-408-080-00	INDUCTOR 100uH			
L108	1-410-397-21	FERRITE BEAD INDUCTOR			
L109	1-410-397-21	FERRITE BEAD INDUCTOR			
		< TRANSISTOR >			
Q101	8-729-118-01	TRANSISTOR 2SB1116			
Q102	8-729-900-63	TRANSISTOR DTA124ES			
Q103	8-729-900-36	TRANSISTOR DTC124ES			
Q104	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q105	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q106	8-729-900-63	TRANSISTOR DTA124ES			
Q112	8-729-209-15	TRANSISTOR 2SD2012			
Q113	8-729-900-36	TRANSISTOR DTC124ES			
Q114	8-729-030-18	TRANSISTOR 2SD2525			
		< RESISTOR >			
R101	1-247-806-11	CARBON	91	5%	1/4W
R102	1-249-393-11	CARBON	10	5%	1/4W F
R103	1-249-417-11	CARBON	1K	5%	1/4W F
R104	1-249-429-11	CARBON	10K	5%	1/4W
R105	1-249-429-11	CARBON	10K	5%	1/4W
R106	1-249-411-11	CARBON	330	5%	1/4W
R107	1-249-429-11	CARBON	10K	5%	1/4W
R108	1-249-411-11	CARBON	330	5%	1/4W
R112	1-249-431-11	CARBON	15K	5%	1/4W
R113	1-249-431-11	CARBON	15K	5%	1/4W
R114	1-247-883-00	CARBON	150K	5%	1/4W
R115	1-247-883-00	CARBON	150K	5%	1/4W
R116	1-247-843-11	CARBON	3.3K	5%	1/4W
R117	1-249-417-11	CARBON	1K	5%	1/4W F
R118	1-249-427-11	CARBON	6.8K	5%	1/4W F
R119	1-247-887-00	CARBON	220K	5%	1/4W
R120	1-249-437-11	CARBON	47K	5%	1/4W
R121	1-247-896-11	CARBON	510K	5%	1/4W
R122	1-249-441-11	CARBON	100K	5%	1/4W
R123	1-247-881-00	CARBON	120K	5%	1/4W
R124	1-249-438-11	CARBON	56K	5%	1/4W
R125	1-249-427-11	CARBON	6.8K	5%	1/4W F
R126	1-249-424-11	CARBON	3.9K	5%	1/4W F
R127	1-249-437-11	CARBON	47K	5%	1/4W
R128	1-247-887-00	CARBON	220K	5%	1/4W
R129	1-249-417-11	CARBON	1K	5%	1/4W F
R130	1-249-432-11	CARBON	18K	5%	1/4W
R131	1-249-432-11	CARBON	18K	5%	1/4W

Ref. No.	Part No.	Description			Remark	
R132	1-247-843-11	CARBON	3.3K	5%	1/4W	
R133	1-247-843-11	CARBON	3.3K	5%	1/4W	
R134	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R135	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R136	1-249-429-11	CARBON	10K	5%	1/4W	
R137	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R138	1-249-417-11	CARBON	1K	5%	1/4W	F
R140	1-249-433-11	CARBON	22K	5%	1/4W	
R141	1-247-843-11	CARBON	3.3K	5%	1/4W	
R142	1-247-843-11	CARBON	3.3K	5%	1/4W	
R143	1-247-903-00	CARBON	1M	5%	1/4W	
R144	1-249-429-11	CARBON	10K	5%	1/4W	
R145	1-249-441-11	CARBON	100K	5%	1/4W	
R146	1-249-441-11	CARBON	100K	5%	1/4W	
R147	1-249-417-11	CARBON	1K	5%	1/4W	F
R148	1-249-417-11	CARBON	1K	5%	1/4W	F
R149	1-249-417-11	CARBON	1K	5%	1/4W	F
R150	1-249-417-11	CARBON	1K	5%	1/4W	F
R151	1-249-411-11	CARBON	330	5%	1/4W	
R152	1-249-411-11	CARBON	330	5%	1/4W	
R153	1-249-436-11	CARBON	39K	5%	1/4W	
R154	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R155	1-249-437-00	CARBON	47K	5%	1/4W	
R156	1-249-436-11	CARBON	39K	5%	1/4W	
R157	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R158	1-249-393-11	CARBON	10	5%	1/4W	F
R159	1-249-441-11	CARBON	100K	5%	1/4W	
R160	1-249-417-11	CARBON	1K	5%	1/4W	F
R161	1-249-417-11	CARBON	1K	5%	1/4W	F
R162	1-249-417-11	CARBON	1K	5%	1/4W	F
R163	1-249-441-11	CARBON	100K	5%	1/4W	
R164	1-249-417-11	CARBON	1K	5%	1/4W	F
R165	1-249-417-11	CARBON	1K	5%	1/4W	F
R166	1-249-417-11	CARBON	1K	5%	1/4W	F
R169	1-249-417-11	CARBON	1K	5%	1/4W	F
R170	1-249-417-11	CARBON	1K	5%	1/4W	F
R172	1-247-807-31	CARBON	100	5%	1/4W	
R173	1-247-807-31	CARBON	100	5%	1/4W	
R174	1-247-807-31	CARBON	100	5%	1/4W	
R175	1-247-807-31	CARBON	100	5%	1/4W	
R176	1-249-417-11	CARBON	1K	5%	1/4W	F
R177	1-247-807-31	CARBON	100	5%	1/4W	
R178	1-247-807-31	CARBON	100	5%	1/4W	
R179	1-247-807-31	CARBON	100	5%	1/4W	
R180	1-247-807-31	CARBON	100	5%	1/4W	
R181	1-249-437-11	CARBON	47K	5%	1/4W	
R182	1-249-437-11	CARBON	47K	5%	1/4W	
R183	1-249-437-11	CARBON	47K	5%	1/4W	
R184	1-249-437-11	CARBON	47K	5%	1/4W	
R185	1-249-429-11	CARBON	10K	5%	1/4W	
R186	1-249-429-11	CARBON	10K	5%	1/4W	
R187	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description			Remark	
R188	1-249-429-11	CARBON	10K	5%	1/4W	
R189	1-249-429-11	CARBON	10K	5%	1/4W	
R190	1-249-429-11	CARBON	10K	5%	1/4W	
R191	1-249-429-11	CARBON	10K	5%	1/4W	
R192	1-249-437-11	CARBON	47K	5%	1/4W	
R193	1-249-437-11	CARBON	47K	5%	1/4W	
R194	1-247-807-31	CARBON	100	5%	1/4W	
R195	1-249-429-11	CARBON	10K	5%	1/4W	
R196	1-247-843-11	CARBON	3.3K	5%	1/4W	
R197	1-247-843-11	CARBON	3.3K	5%	1/4W	
R198	1-247-843-11	CARBON	3.3K	5%	1/4W	
R199	1-247-807-31	CARBON	100	5%	1/4W	
R702	1-247-807-31	CARBON	100	5%	1/4W	
R703	1-247-807-31	CARBON	100	5%	1/4W	
R704	1-247-807-31	CARBON	100	5%	1/4W	
R705	1-247-807-31	CARBON	100	5%	1/4W	
R706	1-247-807-31	CARBON	100	5%	1/4W	
R707	1-247-807-31	CARBON	100	5%	1/4W	
R710	1-249-429-11	CARBON	10K	5%	1/4W	
R711	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R712	1-249-429-11	CARBON	10K	5%	1/4W	
R713	1-247-807-31	CARBON	100	5%	1/4W	
R714	1-247-807-31	CARBON	100	5%	1/4W	
R715	1-247-807-31	CARBON	100	5%	1/4W	
R716	1-247-807-31	CARBON	100	5%	1/4W	
R717	1-247-807-31	CARBON	100	5%	1/4W	
R718	1-247-807-31	CARBON	100	5%	1/4W	
R719	1-247-807-31	CARBON	100	5%	1/4W	
R720	1-247-807-31	CARBON	100	5%	1/4W	
R721	1-247-807-31	CARBON	100	5%	1/4W	
R722	1-247-807-31	CARBON	100	5%	1/4W	
R724	1-249-429-11	CARBON	10K	5%	1/4W	
R725	1-247-887-00	CARBON	220K	5%	1/4W	
R726	1-249-441-11	CARBON	100K	5%	1/4W	
R727	1-249-441-11	CARBON	100K	5%	1/4W	
R728	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R729	1-247-807-31	CARBON	100	5%	1/4W	
R730	1-247-807-31	CARBON	100	5%	1/4W	
R731	1-247-807-31	CARBON	100	5%	1/4W	
R732	1-247-807-31	CARBON	100	5%	1/4W	
R733	1-247-807-31	CARBON	100	5%	1/4W	
R734	1-247-807-31	CARBON	100	5%	1/4W	
R735	1-247-807-31	CARBON	100	5%	1/4W	
R736	1-247-807-31	CARBON	100	5%	1/4W	
R737	1-247-807-31	CARBON	100	5%	1/4W	
R738	1-247-883-00	CARBON	150K	5%	1/4W	
R739	1-247-883-00	CARBON	150K	5%	1/4W	
R740	1-249-441-11	CARBON	100K	5%	1/4W	
R741	1-249-441-11	CARBON	100K	5%	1/4W	
R742	1-247-862-11	CARBON	20K	5%	1/4W	
R743	1-247-862-11	CARBON	20K	5%	1/4W	
R744	1-249-429-11	CARBON	10K	5%	1/4W	
R745	1-249-429-11	CARBON	10K	5%	1/4W	

CD **OP/CL** **CTR SENSOR**

DCNT SENSOR **DDET SENSOR** **FL**

Consisting the following section in the FL. (KEY (1), JW)

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV101	1-238-601-11	RES, ADJ, CARBON 22K	
RV102	1-238-601-11	RES, ADJ, CARBON 22K	
RV103	1-238-601-11	RES, ADJ, CARBON 22K	
		< VIBRATOR >	
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)	
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)	
**********			
*	1-662-231-11	OP/CL SW BOARD	
		**********	
		< SWITCH >	
SW103	1-762-783-11	SWITCH, LEVER (OPEN//CLOSE DET)	
**********			
*	1-662-185-11	CTR SENSOR BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PC102	8-719-991-99	PHOTO INTERRUPTER GP1S52V	
**********			
*	1-662-186-11	DCNT SENSOR BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PC103	8-719-975-18	DIODE GP1S51	
**********			
*	1-662-190-11	DDET SENSOR BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PC101	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			
*	A-4390-748-A	FL BOARD, COMPLETE (US)	
		**********	
		(Including KEY (1), JW board)	
*	A-4398-422-A	FL BOARD, COMPLETE (AUS)	
		**********	
		(Including KEY (1), JW board)	
*	1-690-880-61	LEAD (WITH CONNECTOR)	
*	4-921-941-01	CUSHION (FL)	
*	4-974-459-01	HOLDER (FL)	
		< CAPACITOR >	
C400	1-128-551-11	ELECT 22uF 20% 35V	
C401	1-124-903-11	ELECT 1uF 20% 50V	
C402	1-124-903-11	ELECT 1uF 20% 50V	
C403	1-161-494-00	CERAMIC 0.022uF 25V	
C404	1-124-910-11	ELECT 47uF 20% 50V	
C405	1-104-664-11	ELECT 47uF 20% 10V	
C406	1-124-907-11	ELECT 10uF 20% 50V	
C407	1-124-463-00	ELECT 0.1uF 20% 50V	
C408	1-136-173-00	FILM 0.47uF 5% 50V	
C409	1-164-159-11	CERAMIC 0.1uF 50V	
C410	1-164-159-11	CERAMIC 0.1uF 50V	
C411	1-164-159-11	CERAMIC 0.1uF 50V	
C412	1-164-159-11	CERAMIC 0.1uF 50V	
C413	1-164-159-11	CERAMIC 0.1uF 50V	
C414	1-164-159-11	CERAMIC 0.1uF 50V	
C415	1-164-159-11	CERAMIC 0.1uF 50V	
C416	1-164-159-11	CERAMIC 0.1uF 50V	
C417	1-164-159-11	CERAMIC 0.1uF 50V	
		< DIODE >	
D403	8-719-987-63	DIODE 1N4148M	
D404	8-719-045-89	DIODE SML16760CN (SYSTEM POWER ON/STANDBY)	
D405	8-719-056-13	DIODE SML79423C-TP15 (DISC 1)	
D406	8-719-056-13	DIODE SML79423C-TP15 (DISC 2)	
D407	8-719-056-13	DIODE SML79423C-TP15 (DISC 3)	
D408	8-719-056-13	DIODE SML79423C-TP15 (DISC 4)	
D409	8-719-056-13	DIODE SML79423C-TP15 (DISC 5)	
D410	8-719-056-13	DIODE SML79423C-TP15 (DISC 6)	
D411	8-719-056-13	DIODE SML79423C-TP15 (DISC 7)	
D430	8-719-987-63	DIODE 1N4148M	
D431	8-719-987-63	DIODE 1N4148M	
		< FLUORESCENT INDICATOR >	
FL401	1-517-551-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC401	8-759-446-45	IC uPD780204GF-020-3BA	
IC402	8-759-165-80	IC PST600C-T	
IC403	8-759-459-84	IC NJL56H400	
		< COIL >	
L401	1-408-080-00	INDUCTOR 100uH	
L402	1-408-080-00	INDUCTOR 100uH	
		< TRANSISTOR >	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-900-80	TRANSISTOR DTC114ES	
Q403	8-729-900-80	TRANSISTOR DTC114ES	
Q408	8-729-900-80	TRANSISTOR DTC114ES	
Q409	8-729-900-80	TRANSISTOR DTC114ES	
Q410	8-729-900-80	TRANSISTOR DTC114ES	

Ref. No.	Part No.	Description				Remark
Q411	8-729-900-80	TRANSISTOR	DTC114ES			
Q412	8-729-900-80	TRANSISTOR	DTC114ES			
Q413	8-729-900-80	TRANSISTOR	DTC114ES			
Q414	8-729-900-80	TRANSISTOR	DTC114ES			
Q415	8-729-422-57	TRANSISTOR	UN4111			
Q416	8-729-422-57	TRANSISTOR	UN4111			
Q417	8-729-422-57	TRANSISTOR	UN4111			
Q418	8-729-422-57	TRANSISTOR	UN4111			
Q419	8-729-422-57	TRANSISTOR	UN4111			
Q420	8-729-422-57	TRANSISTOR	UN4111			
Q421	8-729-422-57	TRANSISTOR	UN4111			
Q423	8-729-422-57	TRANSISTOR	UN4111			
		< RESISTOR >				
R413	1-249-441-11	CARBON	100K	5%	1/4W	
R414	1-249-441-11	CARBON	100K	5%	1/4W	
R415	1-249-441-11	CARBON	100K	5%	1/4W	
R416	1-249-441-11	CARBON	100K	5%	1/4W	
R417	1-249-429-11	CARBON	10K	5%	1/4W	
R418	1-249-417-11	CARBON	1K	5%	1/4W	F
R419	1-249-429-11	CARBON	10K	5%	1/4W	
R420	1-249-429-11	CARBON	10K	5%	1/4W	
R421	1-247-903-00	CARBON	1M	5%	1/4W	
R422	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R423	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R424	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R425	1-247-843-11	CARBON	3.3K	5%	1/4W	
R427	1-249-437-11	CARBON	47K	5%	1/4W	
R428	1-249-437-11	CARBON	47K	5%	1/4W	
R429	1-249-437-11	CARBON	47K	5%	1/4W	
R430	1-249-437-11	CARBON	47K	5%	1/4W	
R431	1-249-437-11	CARBON	47K	5%	1/4W	
R432	1-249-437-11	CARBON	47K	5%	1/4W	
R433	1-247-843-11	CARBON	3.3K	5%	1/4W	
R434	1-249-429-11	CARBON	10K	5%	1/4W	
R435	1-249-429-11	CARBON	10K	5%	1/4W	
R436	1-247-807-31	CARBON	100	5%	1/4W	
R437	1-247-807-31	CARBON	100	5%	1/4W	
R438	1-247-807-31	CARBON	100	5%	1/4W	
R439	1-247-807-31	CARBON	100	5%	1/4W	
R441	1-247-807-31	CARBON	100	5%	1/4W	
R442	1-247-807-31	CARBON	100	5%	1/4W	
R443	1-247-807-31	CARBON	100	5%	1/4W	
R444	1-247-807-31	CARBON	100	5%	1/4W	
R445	1-247-807-31	CARBON	100	5%	1/4W	
R446	1-247-807-31	CARBON	100	5%	1/4W	
R447	1-249-415-11	CARBON	680	5%	1/4W	F
R448	1-249-415-11	CARBON	680	5%	1/4W	F
R449	1-249-415-11	CARBON	680	5%	1/4W	F
R450	1-249-411-11	CARBON	330	5%	1/4W	
R451	1-249-409-11	CARBON	220	5%	1/4W	
R452	1-247-807-31	CARBON	100	5%	1/4W	

Ref. No.	Part No.	Description			Remark
R453	1-247-807-31	CARBON	100	5%	1/4W
R454	1-247-807-31	CARBON	100	5%	1/4W
R455	1-247-807-31	CARBON	100	5%	1/4W
R456	1-249-409-11	CARBON	220	5%	1/4W
R457	1-249-411-11	CARBON	330	5%	1/4W
R458	1-249-409-11	CARBON	220	5%	1/4W
R459	1-249-411-11	CARBON	330	5%	1/4W
R460	1-249-409-11	CARBON	220	5%	1/4W
R461	1-249-411-11	CARBON	330	5%	1/4W
R462	1-249-409-11	CARBON	220	5%	1/4W
R463	1-249-411-11	CARBON	330	5%	1/4W
R464	1-249-409-11	CARBON	220	5%	1/4W
R465	1-249-411-11	CARBON	330	5%	1/4W
R466	1-249-409-11	CARBON	220	5%	1/4W
R467	1-249-411-11	CARBON	330	5%	1/4W
R468	1-249-409-11	CARBON	220	5%	1/4W
R469	1-249-411-11	CARBON	330	5%	1/4W
R470	1-249-407-11	CARBON	150	5%	1/4W F
R471	1-249-409-11	CARBON	220	5%	1/4W
R472	1-249-411-11	CARBON	330	5%	1/4W
R473	1-249-413-11	CARBON	470	5%	1/4W F
R486	1-249-407-11	CARBON	150	5%	1/4W F
R487	1-249-409-11	CARBON	220	5%	1/4W
R488	1-249-411-11	CARBON	330	5%	1/4W
R489	1-249-413-11	CARBON	470	5%	1/4W F
R490	1-249-417-11	CARBON	1K	5%	1/4W F
R491	1-249-419-11	CARBON	1.5K	5%	1/4W F
R492	1-247-843-11	CARBON	3.3K	5%	1/4W
R494	1-249-415-11	CARBON	680	5%	1/4W F
R495	1-247-807-31	CARBON	100	5%	1/4W
R504	1-249-441-11	CARBON	100K	5%	1/4W
R505	1-249-441-11	CARBON	100K	5%	1/4W
R506	1-249-441-11	CARBON	100K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
R508	1-249-441-11	CARBON	100K	5%	1/4W
R509	1-249-441-11	CARBON	100K	5%	1/4W
R510	1-249-441-11	CARBON	100K	5%	1/4W
R511	1-249-441-11	CARBON	100K	5%	1/4W
R512	1-249-441-11	CARBON	100K	5%	1/4W
R513	1-249-441-11	CARBON	100K	5%	1/4W
R514	1-249-441-11	CARBON	100K	5%	1/4W
R515	1-249-441-11	CARBON	100K	5%	1/4W
R516	1-249-441-11	CARBON	100K	5%	1/4W
R517	1-249-441-11	CARBON	100K	5%	1/4W
R518	1-249-441-11	CARBON	100K	5%	1/4W
R519	1-249-441-11	CARBON	100K	5%	1/4W
R520	1-249-441-11	CARBON	100K	5%	1/4W
R521	1-249-441-11	CARBON	100K	5%	1/4W
R522	1-249-441-11	CARBON	100K	5%	1/4W
R523	1-249-441-11	CARBON	100K	5%	1/4W
R524	1-249-441-11	CARBON	100K	5%	1/4W
R532	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remark
R533	1-247-807-31	CARBON	100	5%	1/4W
R534	1-247-807-31	CARBON	100	5%	1/4W
R535	1-247-807-31	CARBON	100	5%	1/4W
R536	1-247-807-31	CARBON	100	5%	1/4W
R537	1-247-807-31	CARBON	100	5%	1/4W
R538	1-247-807-31	CARBON	100	5%	1/4W
R550	1-249-429-11	CARBON	10K	5%	1/4W
		< SWITCH >			
S400	1-762-196-21	SWITCH, TACT (SYSTEM POWER ON/STANDBY)			
S401	1-762-196-21	SWITCH, TACT (FUNCTION)			
S402	1-762-196-21	SWITCH, TACT (SURROUND)			
S403	1-762-196-21	SWITCH, TACT (MASTER VOLUME -)			
S404	1-762-196-21	SWITCH, TACT (MASTER VOLUME +)			
S405	1-762-196-21	SWITCH, TACT (DISC 1)			
S406	1-762-196-21	SWITCH, TACT (DISC 2)			
S407	1-762-196-21	SWITCH, TACT (DISC 3)			
S408	1-762-196-21	SWITCH, TACT (DISC 4)			
S409	1-762-196-21	SWITCH, TACT (DISC 5)			
S410	1-762-196-21	SWITCH, TACT (DISC 6)			
S411	1-762-196-21	SWITCH, TACT (DISC 7)			
S412	1-762-196-21	SWITCH, TACT (OPEN/CLOSE)			
		< VIBRATOR >			
X401	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
**********					
*	1-660-834-11	HP BOARD ********			
		< JACK >			
J1501	1-750-733-11	JACK (LARGE TYPE) (HEADPHONES)			
**********					
*	1-662-187-11	HPOS SW BOARD **********			
		< SWITCH >			
SW104	1-762-784-11	SWITCH, MICRO (HIGH POSITION DET)			
**********					
*	A-4390-749-A	KEY (2) BOARD, COMPLETE **********			
		< DIODE >			
D412	8-719-058-04	DIODE SEL5223S-TP15 (REC ●)			
D413	8-719-058-64	DIODE SEL5823A-TP15 (PAUSE ▮▮)			
D414	8-719-058-03	DIODE SEL5423E-TP15 (▷)			
D415	8-719-058-03	DIODE SEL5423E-TP15 (◁)			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q404	8-729-900-80	TRANSISTOR DTC114ES			
Q405	8-729-900-80	TRANSISTOR DTC114ES			
Q406	8-729-900-80	TRANSISTOR DTC114ES			
Q407	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R474	1-249-417-11	CARBON	1K	5%	1/4W F
R475	1-249-419-11	CARBON	1.5K	5%	1/4W F
R476	1-247-843-11	CARBON	3.3K	5%	1/4W
R477	1-249-429-11	CARBON	10K	5%	1/4W
R478	1-249-407-11	CARBON	150	5%	1/4W F
R479	1-249-409-11	CARBON	220	5%	1/4W
R480	1-249-411-11	CARBON	330	5%	1/4W
R481	1-249-413-11	CARBON	470	5%	1/4W F
R482	1-249-417-11	CARBON	1K	5%	1/4W F
R483	1-249-419-11	CARBON	1.5K	5%	1/4W F
R484	1-247-843-11	CARBON	3.3K	5%	1/4W
R485	1-249-429-11	CARBON	10K	5%	1/4W
R496	1-249-411-11	CARBON	330	5%	1/4W
R497	1-249-411-11	CARBON	330	5%	1/4W
R498	1-249-409-11	CARBON	220	5%	1/4W
R499	1-249-409-11	CARBON	220	5%	1/4W
R500	1-247-807-31	CARBON	100	5%	1/4W
R501	1-247-807-31	CARBON	100	5%	1/4W
R502	1-247-807-31	CARBON	100	5%	1/4W
R503	1-247-807-31	CARBON	100	5%	1/4W
		< SWITCH >			
S413	1-762-196-21	SWITCH, TACT (STOP ■)			
S414	1-762-196-21	SWITCH, TACT (◁)			
S415	1-762-196-21	SWITCH, TACT (▷)			
S416	1-762-196-21	SWITCH, TACT (REC ●)			
S417	1-762-196-21	SWITCH, TACT (PAUSE ▮▮)			
S418	1-762-196-21	SWITCH, TACT (▶▶ ▷▷▮)			
S419	1-762-196-21	SWITCH, TACT (▮◁◁ ◀◀)			
S420	1-762-196-21	SWITCH, TACT (BAND)			
S421	1-762-196-21	SWITCH, TACT (TUNING -)			
S422	1-762-196-21	SWITCH, TACT (TUNING +)			
S423	1-762-196-21	SWITCH, TACT (TUNING MODE)			
S424	1-762-196-21	SWITCH, TACT (DOLBY NR)			
S425	1-762-196-21	SWITCH, TACT (DIRECTION)			
**********					
*	1-638-020-11	LEAF SW BOARD **********			
		< CONNECTOR >			
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC81	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)			

Consisting the following section in the main. (IC)

LEAF SW **LED** **MAIN**

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R81	1-249-414-11	CARBON	560	5%	1/4W	F
R82	1-247-818-91	CARBON	300	5%	1/4W	
R83	1-247-834-11	CARBON	1.3K	5%	1/4W	
R84	1-249-417-11	CARBON	1K	5%	1/4W	F
R85	1-249-408-11	CARBON	180	5%	1/4W	F
		< SWITCH >				
S81	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP DET)				
S82	1-571-281-21	SWITCH, LEAF (CrO_2 DET)				
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF (SIDE A))				
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF (SIDE B))				
S86	1-571-281-21	SWITCH, LEAF (HALF DET)				
**********						
*	1-660-833-11	LED BOARD *********				
		< CONNECTOR >				
* CN1551	1-568-854-11	SOCKET, CONNECTOR 11P				
		< DIODE >				
D1501	8-719-058-04	DIODE SEL5223S-TP15 (READY)				
D1502	8-719-058-03	DIODE SEL5423E-TP15 (OPERATE)				
D1503	8-719-058-04	DIODE SEL5223S-TP15 (EXT)				
D1504	8-719-058-04	DIODE SEL5223S-TP15 (INT)				
D1505	8-719-058-04	DIODE SEL5223S-TP15 (SPEAKERS)				
		< SWITCH >				
S1501	1-762-196-21	SWITCH, TACT (SPEAKERS ON/OFF)				
**********						
*	A-4390-759-A	MAIN BOARD, COMPLETE ********** (Including IC board)				
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
		< CAPACITOR >				
C601	1-104-664-11	ELECT	47uF	20%	10V	
C602	1-136-165-00	FILM	0.1uF	5%	50V	
C603	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C604	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C605	1-164-159-11	CERAMIC	0.1uF		50V	
C606	1-136-173-00	FILM	0.47uF	5%	50V	
C607	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C611	1-124-463-00	ELECT	0.1uF	20%	50V	
C612	1-124-907-11	ELECT	10uF	20%	50V	
C614	1-102-518-11	CERAMIC	33PF	5%	50V	
C615	1-102-852-91	CERAMIC	47PF	5%	50V	
C616	1-102-106-00	CERAMIC	100PF	10%	50V	
C617	1-164-159-11	CERAMIC	0.1uF		50V	

Ref. No.	Part No.	Description			Remark
C618	1-104-664-11	ELECT	47uF	20%	10V
C619	1-124-907-11	ELECT	10uF	20%	50V
C620	1-124-907-11	ELECT	10uF	20%	50V
C621	1-162-290-31	CERAMIC	470PF	10%	50V
C622	1-136-177-00	FILM	1uF	5%	50V
C623	1-124-903-11	ELECT	1uF	20%	50V
C624	1-136-162-00	FILM	0.056uF	5%	50V
C625	1-136-157-00	FILM	0.022uF	5%	50V
C626	1-164-159-11	CERAMIC	0.1uF		50V
C627	1-162-306-11	CERAMIC	0.01uF	20%	16V
C628	1-124-903-11	ELECT	1uF	20%	50V
C629	1-162-293-31	CERAMIC	820PF	10%	50V
C630	1-164-159-11	CERAMIC	0.1uF		50V
C631	1-102-074-00	CERAMIC	0.001uF	10%	50V
C632	1-162-306-11	CERAMIC	0.01uF	20%	16V
C633	1-126-963-11	ELECT	4.7uF	20%	50V
C634	1-102-508-91	CERAMIC	10PF	0.5PF	50V
C635	1-102-106-00	CERAMIC	100PF	10%	50V
C636	1-164-026-11	CERAMIC	20PF	5%	50V
C637	1-102-074-00	CERAMIC	0.001uF	10%	50V
C638	1-164-026-11	CERAMIC	20PF	5%	50V
C639	1-102-129-00	CERAMIC	10000PF	10%	50V
C640	1-102-106-00	CERAMIC	100PF	10%	50V
C641	1-102-106-00	CERAMIC	100PF	10%	50V
C642	1-164-159-11	CERAMIC	0.1uF		50V
C643	1-102-106-00	CERAMIC	100PF	10%	50V
C644	1-136-169-00	FILM	0.22uF	5%	50V
C645	1-164-159-11	CERAMIC	0.1uF		50V
C657	1-104-664-11	ELECT	47uF	20%	10V
C660	1-164-159-11	CERAMIC	0.1uF		50V
C662	1-162-306-11	CERAMIC	0.01uF	20%	16V
C663	1-136-173-00	FILM	0.47uF	5%	50V
C665	1-164-159-11	CERAMIC	0.1uF		50V
C680	1-162-286-31	CERAMIC	220PF	10%	50V
C681	1-162-286-31	CERAMIC	220PF	10%	50V
C682	1-162-286-31	CERAMIC	220PF	10%	50V
C683	1-162-286-31	CERAMIC	220PF	10%	50V
C684	1-162-286-31	CERAMIC	220PF	10%	50V
C685	1-162-286-31	CERAMIC	220PF	10%	50V
C686	1-164-159-11	CERAMIC	0.1uF		50V
C811	1-162-306-11	CERAMIC	0.01uF	20%	16V
C812	1-164-159-11	CERAMIC	0.1uF		50V
C813	1-164-159-11	CERAMIC	0.1uF		50V
C814	1-162-286-31	CERAMIC	220PF	10%	50V
C815	1-126-963-11	ELECT	4.7uF	20%	50V
C816	1-126-963-11	ELECT	4.7uF	20%	50V
C817	1-124-907-11	ELECT	10uF	20%	50V
C818	1-124-907-11	ELECT	10uF	20%	50V
C819	1-124-443-00	ELECT	100uF	20%	10V
C820	1-124-443-00	ELECT	100uF	20%	10V
C821	1-124-902-00	ELECT	0.47uF	20%	50V
C823	1-124-902-00	ELECT	0.47uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C824	1-124-443-00	ELECT	100uF	20%	10V
C825	1-124-443-00	ELECT	100uF	20%	10V
C826	1-126-963-11	ELECT	4.7uF	20%	50V
C900	1-162-282-31	CERAMIC	100PF	10%	50V
C901	1-136-165-00	FILM	0.1uF	5%	50V
C902	1-136-165-00	FILM	0.1uF	5%	50V
C903	1-124-636-00	ELECT	3300uF	20%	25V
C904	1-124-563-11	ELECT	2200uF	20%	25V
C905	1-136-165-00	FILM	0.1uF	5%	50V
C906	1-136-165-00	FILM	0.1uF	5%	50V
C907	1-126-968-11	ELECT	100uF	20%	6.3V
C908	1-126-968-11	ELECT	100uF	20%	6.3V
C909	1-126-927-11	ELECT	2200uF	20%	10V
C910	1-126-927-11	ELECT	2200uF	20%	10V
C914	1-124-907-11	ELECT	10uF	20%	50V
C915	1-126-929-11	ELECT	4700uF	20%	10V
C916	1-124-910-11	ELECT	47uF	20%	50V
C917	1-124-910-11	ELECT	47uF	20%	50V
C918	1-124-907-11	ELECT	10uF	20%	50V
C919	1-124-907-11	ELECT	10uF	20%	50V
C920	1-136-165-00	FILM	0.1uF	5%	50V
C921	1-136-165-00	FILM	0.1uF	5%	50V
C922	1-124-557-11	ELECT	1000uF	20%	25V
C923	1-104-666-11	ELECT	220uF	20%	16V
C924	1-104-665-11	ELECT	100uF	20%	16V
C926	1-104-905-11	CAPACITOR	0.22F		5.5V
C927	1-136-165-00	FILM	0.1uF	5%	50V
C928	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN602	1-568-824-11	SOCKET, CONNECTOR 5P			
* CN911	1-568-871-11	SOCKET, CONNECTOR 29P			
* CN912	1-568-832-11	SOCKET, CONNECTOR 13P			
CN915	1-770-382-11	CONNECTOR, BOARD TO BOARD 12P			
CN916	1-770-382-11	CONNECTOR, BOARD TO BOARD 12P			
CN917	1-770-382-11	CONNECTOR, BOARD TO BOARD 12P			
CN918	1-770-382-11	CONNECTOR, BOARD TO BOARD 12P			
* CN919	1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL)			
* CN920	1-506-946-11	PIN, CONNECTOR 4P			
* CN921	1-506-944-11	PIN, CONNECTOR 2P			
		< TRIMMER >			
CT601	1-141-276-00	CAP, TRIMMER			
CT602	1-141-276-00	CAP, TRIMMER			
		< DIODE >			
D601	8-719-987-63	DIODE 1N4148M			
D602	8-719-987-63	DIODE 1N4148M			
D604	8-719-024-99	DIODE 11ES2-NTA2B			
D605	8-719-987-63	DIODE 1N4148M			
D610	8-719-987-63	DIODE 1N4148M			
D611	8-719-987-63	DIODE 1N4148M			

Ref. No.	Part No.	Description	Remark
D801	8-719-987-63	DIODE 1N4148M	
D901	8-719-024-99	DIODE 11ES2-NTA2B	
D902	8-719-024-99	DIODE 11ES2-NTA2B	
D903	8-719-024-99	DIODE 11ES2-NTA2B	
D904	8-719-024-99	DIODE 11ES2-NTA2B	
D905	8-719-987-63	DIODE 1N4148M	
D906	8-719-987-63	DIODE 1N4148M	
D908	8-719-987-63	DIODE 1N4148M	
D909	8-719-024-99	DIODE 11ES2-NTA2B	
D910	8-719-024-99	DIODE 11ES2-NTA2B	
D911	8-719-002-48	DIODE UZL-27H	
D912	8-719-014-56	DIODE UZP-5.1B	
D913	8-719-024-99	DIODE 11ES2-NTA2B	
D914	8-719-024-99	DIODE 11ES2-NTA2B	
D915	8-719-987-63	DIODE 1N4148M	
D917	8-719-987-63	DIODE 1N4148M	
D918	8-719-024-99	DIODE 11ES2-NTA2B	
D919	8-719-024-99	DIODE 11ES2-NTA2B	
D921	8-719-024-99	DIODE 11ES2-NTA2B	
D922	8-719-987-63	DIODE 1N4148M	
D923	8-719-001-42	DIODE UZL-11M1	
D924	8-719-987-63	DIODE 1N4148M	
D925	8-719-987-63	DIODE 1N4148M	
D926	8-719-024-99	DIODE 11ES2-NTA2B	
		< FERRITE BEAD >	
FB601	1-412-473-21	INDUCTOR 0UH	
FB602	1-412-473-21	INDUCTOR 0UH	
FB603	1-412-473-21	INDUCTOR 0UH	
FB604	1-412-473-21	INDUCTOR 0UH	
FB605	1-412-473-21	INDUCTOR 0UH	
FB606	1-412-473-21	INDUCTOR 0UH	
FB607	1-412-473-21	INDUCTOR 0UH	
FB608	1-410-397-21	FERRITE BEAD INDUCTOR	
FB609	1-410-397-21	FERRITE BEAD INDUCTOR	
FB610	1-410-397-21	FERRITE BEAD INDUCTOR	
		< IC >	
IC601	8-759-421-49	IC MX23C4000PC-12-TT-1	
IC602	8-759-432-43	IC HD6413004F	
IC604	8-759-165-80	IC PST600C-T	
IC605	8-759-438-35	IC MB90095PF-G-175	
IC606	8-759-341-79	IC LA7217	
IC607	8-759-916-12	IC SN74HC00AN	
IC608	8-759-093-25	IC MB3512PFQ	
IC801	8-759-805-14	IC LC7822	
IC802	8-759-634-51	IC M5218AP	
IC803	8-759-634-51	IC M5218AP	
IC901	8-759-604-86	IC M5F7807L	
IC902	8-759-604-90	IC M5F7907L	
IC905	8-759-231-53	IC TA7805S	

Ref. No.	Part No.	Description			Remark
		< JACK >			
J801	1-770-890-11	JACK, PIN 6P (VIDEO 2 AUDIO IN/OUT, LINE OUT)			
J802	1-766-851-11	JACK, PIN 4P (VIDEO 1 AUDIO IN/OUT)			
		< COIL >			
L602	1-410-513-11	INDUCTOR 22uH			
L603	1-408-080-00	INDUCTOR 100uH			
		< TRANSISTOR >			
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q602	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q801	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q802	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q901	8-729-224-61	TRANSISTOR 2SK246-Y			
Q903	8-729-030-18	TRANSISTOR 2SD2525			
Q904	8-729-030-19	TRANSISTOR 2SB1640			
Q905	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q906	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R601	1-249-409-11	CARBON	220	5%	1/4W F
R602	1-249-429-11	CARBON	10K	5%	1/4W
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-249-417-11	CARBON	1K	5%	1/4W F
R605	1-249-437-11	CARBON	47K	5%	1/4W
R606	1-249-437-11	CARBON	47K	5%	1/4W
R607	1-249-437-11	CARBON	47K	5%	1/4W
R608	1-249-437-11	CARBON	47K	5%	1/4W
R610	1-249-437-11	CARBON	47K	5%	1/4W
R611	1-249-437-11	CARBON	47K	5%	1/4W
R614	1-249-429-11	CARBON	10K	5%	1/4W
R615	1-249-417-11	CARBON	1K	5%	1/4W F
R616	1-249-429-11	CARBON	10K	5%	1/4W
R617	1-249-417-11	CARBON	1K	5%	1/4W F
R618	1-249-424-11	CARBON	3.9K	5%	1/4W F
R619	1-249-418-11	CARBON	1.2K	5%	1/4W F
R620	1-249-437-11	CARBON	47K	5%	1/4W
R621	1-249-421-11	CARBON	2.2K	5%	1/4W F
R622	1-247-883-00	CARBON	150K	5%	1/4W
R623	1-249-424-11	CARBON	3.9K	5%	1/4W F
R624	1-249-414-11	CARBON	560	5%	1/4W F
R625	1-249-429-11	CARBON	10K	5%	1/4W
R626	1-249-425-11	CARBON	4.7K	5%	1/4W F
R627	1-249-414-11	CARBON	560	5%	1/4W F
R628	1-249-409-11	CARBON	220	5%	1/4W F
R629	1-249-414-11	CARBON	560	5%	1/4W F
R630	1-249-417-11	CARBON	1K	5%	1/4W F
R631	1-249-414-11	CARBON	560	5%	1/4W F
R632	1-249-433-11	CARBON	22K	5%	1/4W
R633	1-249-417-11	CARBON	1K	5%	1/4W F
R657	1-247-807-31	CARBON	100	5%	1/4W
R658	1-247-807-31	CARBON	100	5%	1/4W
R659	1-247-807-31	CARBON	100	5%	1/4W
R660	1-247-807-31	CARBON	100	5%	1/4W
R661	1-247-807-31	CARBON	100	5%	1/4W
R662	1-247-807-31	CARBON	100	5%	1/4W
R670	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-417-11	CARBON	1K	5%	1/4W F
R802	1-249-417-11	CARBON	1K	5%	1/4W F
R803	1-249-417-11	CARBON	1K	5%	1/4W F
R804	1-249-417-11	CARBON	1K	5%	1/4W F
R805	1-249-417-11	CARBON	1K	5%	1/4W F
R806	1-249-417-11	CARBON	1K	5%	1/4W F
R807	1-249-417-11	CARBON	1K	5%	1/4W F
R808	1-249-417-11	CARBON	1K	5%	1/4W F
R809	1-249-417-11	CARBON	1K	5%	1/4W F
R810	1-249-417-11	CARBON	1K	5%	1/4W F
R811	1-249-425-11	CARBON	4.7K	5%	1/4W F
R812	1-249-417-11	CARBON	1K	5%	1/4W F
R813	1-249-417-11	CARBON	1K	5%	1/4W F
R814	1-249-417-11	CARBON	1K	5%	1/4W F
R815	1-249-417-11	CARBON	1K	5%	1/4W F
R816	1-249-417-11	CARBON	1K	5%	1/4W F
R817	1-247-887-00	CARBON	220K	5%	1/4W
R818	1-247-887-00	CARBON	220K	5%	1/4W
R819	1-249-429-11	CARBON	10K	5%	1/4W
R820	1-249-429-11	CARBON	10K	5%	1/4W
R821	1-249-429-11	CARBON	10K	5%	1/4W
R822	1-249-429-11	CARBON	10K	5%	1/4W
R823	1-249-437-11	CARBON	47K	5%	1/4W
R824	1-249-437-11	CARBON	47K	5%	1/4W
R825	1-249-417-11	CARBON	1K	5%	1/4W F
R826	1-249-417-11	CARBON	1K	5%	1/4W F
R827	1-249-417-11	CARBON	1K	5%	1/4W F
R828	1-249-417-11	CARBON	1K	5%	1/4W F
R829	1-249-393-11	CARBON	10	5%	1/4W F
R830	1-249-393-11	CARBON	10	5%	1/4W F
R831	1-247-852-11	CARBON	7.5K	5%	1/4W
R832	1-247-852-11	CARBON	7.5K	5%	1/4W
R837	1-247-891-00	CARBON	330K	5%	1/4W
R838	1-249-441-11	CARBON	100K	5%	1/4W
R839	1-249-425-11	CARBON	4.7K	5%	1/4W F
R840	1-249-425-11	CARBON	4.7K	5%	1/4W F
⚠R903	1-212-857-00	FUSIBLE	10	5%	1/4W F
R904	1-249-417-11	CARBON	1K	5%	1/4W F
R905	1-247-807-31	CARBON	100	5%	1/4W
R906	1-247-807-31	CARBON	100	5%	1/4W
R908	1-249-429-11	CARBON	10K	5%	1/4W
R909	1-247-807-31	CARBON	100	5%	1/4W
R910	1-249-441-11	CARBON	100K	5%	1/4W
R911	1-247-807-31	CARBON	100	5%	1/4W
R912	1-249-437-11	CARBON	47K	5%	1/4W
R913	1-247-807-31	CARBON	100	5%	1/4W
R914	1-249-429-11	CARBON	10K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN **MAIN (CDM)** **MOTOR (6P) (S)**

OVER SW **POS SW** **POWER**

Consisting the following section in the power (CN, PO-L, PO-R, PO-C, PO-RE, PO-W)

Ref. No.	Part No.	Description				Remark
R915	1-249-437-11	CARBON	47K	5%	1/4W	
R916	1-247-807-31	CARBON	100	5%	1/4W	
R917	1-249-393-11	CARBON	10	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV601	1-241-766-11	RES, ADJ, CERMET 47K				
		< VIBRATOR >				
X601	1-579-125-11	VIBRATOR, CERAMIC (8MHz)				
X603	1-579-583-11	VIBRATOR, CERAMIC (503.5kHz)				
X604	1-527-722-00	OSCILLATOR, CRYSTAL (14.31818MHz)				
**********						
*	1-662-184-11	MAIN BOARD (CDM)				
		**********				
		< CONNECTOR >				
* CN202A	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
* CN203A	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
* CN204A	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P				
* CP106B	1-564-728-11	PIN, CONNECTOR (SMALL TYPE)12P				
* CP107B	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P				
CP108B	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P				
		< RESISTOR >				
R101	1-249-410-11	CARBON	270	5%	1/4W	F
R102	1-249-411-11	CARBON	330	5%	1/4W	
R103	1-249-411-11	CARBON	330	5%	1/4W	
**********						
*	1-639-678-12	MOTOR (6P) (S) BOARD				
		**********				
		< CONNECTOR >				
CN1	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P				
		< SWITCH >				
S1	1-572-085-11	SWITCH, LEAF (LIMIT)				
**********						
*	1-662-189-11	OVER SW BOARD				
		**********				
		< COMPOSITION CIRCUIT BLOCK >				
* CP301	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P				
		< SWITCH >				
SW301	1-762-782-11	SWITCH, PUSH (1 KEY) (OPTICAL PICK-UP OVER DET)				
**********						

Ref. No.	Part No.	Description	Remark
*	1-662-188-11	POS SW BOARD	
		**********	
		< SWITCH >	
SW102	1-762-781-11	SWITCH, MICRO (OPTICAL PICK-UP POSITION DET)	
SW102A	1-762-781-11	SWITCH, MICRO (OPTICAL PICK-UP POSITION DET)	
SW102B	1-762-781-11	SWITCH, MICRO (OPTICAL PICK-UP POSITION DET)	
**********			
*	A-4390-751-A	POWER BOARD, COMPLETE	
		**********	
		(Including CN, PO-L, PO-R, PO-C, PO-RE, PO-W board)	
		< CAPACITOR >	
C1601	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C1602	1-162-282-31	CERAMIC 100PF 10% 50V	
C1603	1-104-664-11	ELECT 47uF 20% 25V	
C1604	1-162-191-31	CERAMIC 2.2PF 10% 50V	
C1605	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C1606	1-162-282-31	CERAMIC 100PF 10% 50V	
C1607	1-104-664-11	ELECT 47uF 20% 25V	
C1608	1-162-191-31	CERAMIC 2.2PF 10% 50V	
C1609	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C1610	1-162-282-31	CERAMIC 100PF 10% 50V	
C1611	1-104-664-11	ELECT 47uF 20% 25V	
C1612	1-162-191-31	CERAMIC 2.2PF 10% 50V	
C1613	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C1614	1-162-282-31	CERAMIC 100PF 10% 50V	
C1615	1-124-907-11	ELECT 10uF 20% 50V	
C1616	1-162-191-31	CERAMIC 2.2PF 10% 50V	
C1617	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C1618	1-162-282-31	CERAMIC 100PF 10% 50V	
C1619	1-104-664-11	ELECT 47uF 20% 25V	
C1620	1-162-191-31	CERAMIC 2.2PF 10% 50V	
C1621	1-124-907-11	ELECT 10uF 20% 50V	
C1622	1-124-907-11	ELECT 10uF 20% 50V	
C1623	1-124-907-11	ELECT 10uF 20% 50V	
C1624	1-124-907-11	ELECT 10uF 20% 50V	
C1625	1-137-372-11	FILM 0.022uF 5% 50V	
C1626	1-137-372-11	FILM 0.022uF 5% 50V	
C1627	1-137-372-11	FILM 0.022uF 5% 50V	
C1628	1-137-372-11	FILM 0.022uF 5% 50V	
C1629	1-137-372-11	FILM 0.022uF 5% 50V	
		< CONNECTOR >	
* CN401	1-568-844-11	SOCKET, CONNECTOR 29P	
* CN1153	1-564-522-11	PLUG, CONNECTOR 7P	
CN1605	1-564-523-11	PLUG, CONNECTOR 8P	
		< IC >	
IC1601	8-759-502-31	IC SI-18751	
IC1602	8-759-502-31	IC SI-18751	

Consisting the following section in the SURR.
(SURR 1, SURR 2, PS)

POWER **REG** **STORE** **SURR**

Ref. No.	Part No.	Description				Remark
IC1603	8-759-502-31	IC SI-18751				
IC1604	8-759-502-31	IC SI-18751				
IC1605	8-759-502-31	IC SI-18751				
		< RESISTOR >				
R1601	1-249-431-11	CARBON	15K	5%	1/4W	
R1602	1-249-413-11	CARBON	470	5%	1/4W	F
R1603	1-249-431-11	CARBON	15K	5%	1/4W	
R1604	1-249-431-11	CARBON	15K	5%	1/4W	
R1605	1-249-413-11	CARBON	470	5%	1/4W	F
R1606	1-249-431-11	CARBON	15K	5%	1/4W	
R1607	1-249-431-11	CARBON	15K	5%	1/4W	
R1608	1-249-408-11	CARBON	180	5%	1/4W	F
R1609	1-249-431-11	CARBON	15K	5%	1/4W	
R1610	1-249-431-11	CARBON	15K	5%	1/4W	
R1611	1-247-807-31	CARBON	100	5%	1/4W	
R1612	1-249-431-11	CARBON	15K	5%	1/4W	
R1613	1-249-431-11	CARBON	15K	5%	1/4W	
R1614	1-249-409-11	CARBON	220	5%	1/4W	
R1615	1-249-431-11	CARBON	15K	5%	1/4W	
R1616	1-249-385-11	CARBON	2.2	5%	1/6W	F
R1618	1-249-385-11	CARBON	2.2	5%	1/6W	F
R1620	1-249-385-11	CARBON	2.2	5%	1/6W	F
R1622	1-249-385-11	CARBON	2.2	5%	1/6W	F
R1624	1-249-385-11	CARBON	2.2	5%	1/6W	F
**********						
*	1-663-751-11	REG BOARD (US)				
		*********				
		< CAPACITOR >				
C1920	1-124-472-11	ELECT	470uF	20%	10V	
C1921	1-104-664-11	ELECT	47uF	20%	25V	
C1923	1-104-664-11	ELECT	47uF	20%	25V	
		< DIODE >				
D1920	8-719-001-43	DIODE UZL-11M1-TA				
D1921	8-719-987-63	DIODE 1N4148M				
		< TRANSISTOR >				
Q1920	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q1921	8-729-900-80	TRANSISTOR DTC114ES				
Q1922	8-729-209-15	TRANSISTOR 2SD2012				
		< RESISTOR >				
R1920	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R1921	1-217-637-00	FUSIBLE	1	5%	1/4W	F
**********						

Ref. No.	Part No.	Description				Remark
*	1-662-230-11	STORE BOARD				
		**********				
		< SWITCH >				
SW105	1-762-780-11	SWITCH, MICRO (STOCK-IN DET)				
**********						
*	A-4390-752-A	SURR BOARD, COMPLETE (US)				
		**********				
		(Including SURR 1, SURR 2, PS board)				
*	A-4403-347-A	SURR BOARD, COMPLETE (AUS)				
		**********				
		(Including SURR 1, SURR 2, PS board)				
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
		< CAPACITOR >				
C1106	1-137-372-11	FILM	0.022uF	5%	50V	
C1107	1-137-374-11	FILM	0.047uF	5%	50V	
C1108	1-104-666-11	ELECT	220uF	20%	10V	
C1109	1-124-907-11	ELECT	10uF	20%	50V	
C1110	1-124-907-11	ELECT	10uF	20%	50V	
C1111	1-124-907-11	ELECT	10uF	20%	50V	
C1112	1-124-907-11	ELECT	10uF	20%	50V	
C1113	1-104-666-11	ELECT	220uF	20%	10V	
C1114	1-126-962-11	ELECT	3.3uF	20%	50V	
C1115	1-126-962-11	ELECT	3.3uF	20%	50V	
C1116	1-164-159-21	CERAMIC	0.1uF		50V	
C1117	1-164-159-21	CERAMIC	0.1uF		50V	
C1118	1-124-902-00	ELECT	0.47uF	20%	50V	
C1119	1-126-963-11	ELECT	4.7uF	20%	50V	
C1120	1-124-902-00	ELECT	0.47uF	20%	50V	
C1121	1-126-963-11	ELECT	4.7uF	20%	50V	
C1122	1-136-167-00	FILM	0.15uF	5%	50V	
C1123	1-126-962-11	ELECT	3.3uF	20%	50V	
C1124	1-136-167-00	FILM	0.15uF	5%	50V	
C1125	1-136-167-00	FILM	0.15uF	5%	50V	
C1126	1-126-962-11	ELECT	3.3uF	20%	50V	
C1127	1-136-167-00	FILM	0.15uF	5%	50V	
C1128	1-126-963-11	ELECT	4.7uF	20%	50V	
C1129	1-124-902-00	ELECT	0.47uF	20%	50V	
C1130	1-126-963-11	ELECT	4.7uF	20%	50V	
C1131	1-124-902-00	ELECT	0.47uF	20%	50V	
C1132	1-164-159-21	CERAMIC	0.1uF		50V	
C1133	1-164-159-21	CERAMIC	0.1uF		50V	
C1134	1-104-664-11	ELECT	47uF	20%	25V	
C1135	1-124-902-00	ELECT	0.47uF	20%	50V	
C1136	1-124-907-11	ELECT	10uF	20%	50V	
C1137	1-124-907-11	ELECT	10uF	20%	50V	
C1138	1-162-292-31	CERAMIC	680PF	10%	50V	
C1139	1-164-159-21	CERAMIC	0.1uF		50V	
C1140	1-164-159-21	CERAMIC	0.1uF		50V	

SURR

Ref. No.	Part No.	Description			Remark
C1142	1-126-961-11	ELECT	2.2uF	20%	50V
C1143	1-104-666-11	ELECT	220uF	20%	10V
C1144	1-124-907-11	ELECT	10uF	20%	50V
C1145	1-124-907-11	ELECT	10uF	20%	50V
C1146	1-162-306-11	CERAMIC	0.01uF	20%	16V
C1147	1-124-903-11	ELECT	1uF	20%	50V
C1148	1-130-489-00	MYLAR	0.033uF	5%	50V
C1149	1-137-365-11	FILM	0.0015uF	5%	50V
C1150	1-130-489-00	MYLAR	0.033uF	5%	50V
C1151	1-104-666-11	ELECT	220uF	20%	10V
C1152	1-164-159-21	CERAMIC	0.1uF		50V
C1201	1-124-907-11	ELECT	10uF	20%	50V
C1202	1-104-664-11	ELECT	47uF	20%	25V
C1203	1-124-443-00	ELECT	100uF	20%	10V
C1204	1-164-159-21	CERAMIC	0.1uF		50V
C1205	1-126-233-11	ELECT	22uF	20%	50V
C1206	1-137-367-11	FILM	0.0033uF	5%	50V
C1207	1-137-367-11	FILM	0.0033uF	5%	50V
C1208	1-126-963-11	ELECT	4.7uF	20%	50V
C1209	1-126-963-11	ELECT	4.7uF	20%	50V
C1210	1-136-165-00	FILM	0.1uF	5%	50V
C1211	1-136-165-00	FILM	0.1uF	5%	50V
C1212	1-136-165-00	FILM	0.1uF	5%	50V
C1213	1-136-165-00	FILM	0.1uF	5%	50V
C1251	1-124-907-11	ELECT	10uF	20%	50V
C1252	1-104-664-11	ELECT	47uF	20%	25V
C1255	1-126-233-11	ELECT	22uF	20%	50V
C1259	1-126-963-11	ELECT	4.7uF	20%	50V
C1301	1-136-164-00	FILM	0.082uF	5%	50V
C1302	1-136-163-00	FILM	0.068uF	5%	50V
C1303	1-124-907-11	ELECT	10uF	20%	50V
C1304	1-126-961-11	ELECT	2.2uF	20%	50V
C1305	1-126-963-11	ELECT	4.7uF	20%	50V
C1306	1-126-961-11	ELECT	2.2uF	20%	50V
C1307	1-162-600-11	CERAMIC	0.0047uF	20%	16V
C1308	1-162-600-11	CERAMIC	0.0047uF	20%	16V
C1309	1-162-215-31	CERAMIC	47PF	5%	50V
C1310	1-124-907-11	ELECT	10uF	20%	50V
C1311	1-126-961-11	ELECT	2.2uF	20%	50V
C1312	1-124-907-11	ELECT	10uF	20%	50V
C1313	1-126-961-11	ELECT	2.2uF	20%	50V
C1314	1-126-963-11	ELECT	4.7uF	20%	50V
C1315	1-124-903-11	ELECT	1uF	20%	50V
C1316	1-126-961-11	ELECT	2.2uF	20%	50V
C1317	1-126-963-11	ELECT	4.7uF	20%	50V
C1330	1-126-963-11	ELECT	4.7uF	20%	50V (US)
C1331	1-124-907-11	ELECT	10uF	20%	50V
C1332	1-124-907-11	ELECT	10uF	20%	50V
C1333	1-126-963-11	ELECT	4.7uF	20%	50V (US)
C1337	1-164-159-21	CERAMIC	0.1uF		50V (US)
C1351	1-136-164-00	FILM	0.082uF	5%	50V
C1352	1-136-163-00	FILM	0.068uF	5%	50V
C1353	1-124-907-11	ELECT	10uF	20%	50V
C1354	1-126-961-11	ELECT	2.2uF	20%	50V
C1355	1-126-963-11	ELECT	4.7uF	20%	50V

Ref. No.	Part No.	Description			Remark
C1401	1-124-907-11	ELECT	10uF	20%	50V
C1402	1-124-907-11	ELECT	10uF	20%	50V
C1403	1-124-907-11	ELECT	10uF	20%	50V
C1404	1-124-907-11	ELECT	10uF	20%	50V
C1405	1-162-306-11	CERAMIC	0.01uF	20%	16V
C1406	1-124-907-11	ELECT	10uF	20%	50V
C1407	1-124-443-00	ELECT	100uF	20%	10V
C1408	1-136-172-00	FILM	0.39uF	5%	50V
C1409	1-136-172-00	FILM	0.39uF	5%	50V
C1410	1-136-171-00	FILM	0.33uF	5%	50V
C1411	1-164-159-21	CERAMIC	0.1uF		50V
C1412	1-136-170-00	FILM	0.27uF	5%	50V
C1413	1-136-170-00	FILM	0.27uF	5%	50V
C1414	1-124-907-11	ELECT	10uF	20%	50V
C1415	1-124-907-11	ELECT	10uF	20%	50V
C1416	1-126-963-11	ELECT	4.7uF	20%	50V
C1417	1-136-173-00	FILM	0.47uF	5%	50V
C1503	1-164-159-21	CERAMIC	0.1uF		50V
C1504	1-164-159-21	CERAMIC	0.1uF		50V
C1506	1-104-664-11	ELECT	47uF	20%	10V
C1508	1-124-903-11	ELECT	1uF	20%	50V
C1510	1-164-159-21	CERAMIC	0.1uF		50V
C1512	1-164-159-21	CERAMIC	0.1uF		50V
C1513	1-164-159-21	CERAMIC	0.1uF		50V
C1701	1-104-664-11	ELECT	47uF	20%	10V
C1702	1-126-963-11	ELECT	4.7uF	20%	50V
C1703	1-104-664-11	ELECT	47uF	20%	25V
C1901	1-164-159-21	CERAMIC	0.1uF		50V
C1902	1-164-159-21	CERAMIC	0.1uF		50V
C1903	1-126-955-11	ELECT	4700uF	20%	35V
C1904	1-126-955-11	ELECT	4700uF	20%	35V
C1905	1-164-159-21	CERAMIC	0.1uF		50V
C1906	1-164-159-21	CERAMIC	0.1uF		50V
C1907	1-126-944-11	ELECT	3300uF	20%	25V
C1908	1-126-942-61	ELECT	1000uF	20%	25V
C1909	1-104-664-11	ELECT	47uF	20%	25V
C1910	1-104-664-11	ELECT	47uF	20%	25V
C1913	1-124-472-11	ELECT	470uF	20%	10V

< CONNECTOR >

	CN1301	1-564-506-11	PLUG, CONNECTOR 3P (US)
	CN1302	1-774-136-11	CONNECTOR, ROUND TYPE 6P (WIRELESS OUT) (US)
*	CN1501	1-568-830-11	SOCKET, CONNECTOR 11P
	CN1502	1-564-505-11	PLUG, CONNECTOR 2P
*	CN1601	1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL)
*	CN1602	1-506-946-11	PIN, CONNECTOR 4P
*	CN1603	1-506-944-11	PIN, CONNECTOR 2P
*	CN1924	1-564-508-11	PLUG, CONNECTOR 5P (US)

< DIODE >

	D1401	8-719-987-63	DIODE 1N4148M
	D1402	8-719-987-63	DIODE 1N4148M
	D1701	8-719-987-63	DIODE 1N4148M

Ref. No.	Part No.	Description	Remark
D1702	8-719-987-63	DIODE 1N4148M	
D1703	8-719-987-63	DIODE 1N4148M	
D1704	8-719-987-63	DIODE 1N4148M	
D1705	8-719-987-63	DIODE 1N4148M	
D1901	8-719-500-60	DIODE D5SBA20	
D1902	8-719-200-82	DIODE 11ES2	
D1903	8-719-200-82	DIODE 11ES2	
D1904	8-719-200-82	DIODE 11ES2	
D1905	8-719-200-82	DIODE 11ES2	
D1910	8-719-987-63	DIODE 1N4148M	
D1911	8-719-987-63	DIODE 1N4148M	
D1912	8-719-987-63	DIODE 1N4148M	
		< EARTH >	
* EP1101	1-537-738-21	TERMINAL, EARTH	
* EP1501	1-537-738-21	TERMINAL, EARTH	
* EP1901	1-537-738-21	TERMINAL, EARTH	
		< IC >	
IC1103	8-759-248-74	IC LA2785	
IC1104	8-759-341-23	IC LV1011	
IC1201	8-759-634-51	IC M5218AP	
IC1202	8-759-000-48	IC MC14052BCP	
IC1203	8-759-264-31	IC TDA7315	
IC1204	8-759-264-31	IC TDA7315	
IC1301	8-759-634-51	IC M5218AP	
IC1302	8-759-634-51	IC M5218AP	
IC1303	8-759-634-51	IC M5218AP (US)	
IC1401	8-759-634-51	IC M5218AP	
IC1402	8-759-634-51	IC M5218AP	
IC1403	8-759-248-76	IC LC7824	
IC1404	8-759-634-51	IC M5218AP	
IC1405	8-759-634-51	IC M5218AP	
IC1501	8-759-446-25	IC uPD78042FGF-026-3B9	
IC1502	8-759-165-81	IC PST600D-T	
IC1701	8-759-111-68	IC uPC1237HA	
IC1901	8-759-701-59	IC NJM78M09FA	
IC1902	8-759-604-43	IC M5F79M09L	
IC1903	8-759-604-35	IC M5F78M05L	
		< JACK >	
J1101	1-774-822-11	JACK, PIN 2P (LINE IN)	
		< COIL >	
L1102	1-410-521-11	INDUCTOR 100uH	
L1103	1-410-521-11	INDUCTOR 100uH	
L1141	1-410-509-11	INDUCTOR 10uH (AUS)	
L1501	1-410-521-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q1201	8-729-900-63	TRANSISTOR DTA124ES	
Q1202	8-729-900-63	TRANSISTOR DTA124ES	
Q1203	8-729-900-63	TRANSISTOR DTA124ES	
Q1204	8-729-900-63	TRANSISTOR DTA124ES	
Q1205	8-729-900-63	TRANSISTOR DTA124ES	
Q1206	8-729-900-36	TRANSISTOR DTC124ES	
Q1302	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1303	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1304	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1305	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1352	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1401	8-729-900-36	TRANSISTOR DTC124ES	
Q1402	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1502	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1503	8-729-900-63	TRANSISTOR DTA124ES	
Q1504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1701	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q1702	8-729-900-63	TRANSISTOR DTA124ES	
Q1703	8-729-900-36	TRANSISTOR DTC124ES	
Q1903	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R1101	1-249-417-11	CARBON 1K 5% 1/4W F	
R1105	1-249-441-11	CARBON 100K 5% 1/4W	
R1113	1-249-417-11	CARBON 1K 5% 1/4W F	
R1114	1-249-417-11	CARBON 1K 5% 1/4W F	
R1115	1-249-417-11	CARBON 1K 5% 1/4W F	
R1116	1-249-435-11	CARBON 33K 5% 1/4W	
R1117	1-249-431-11	CARBON 15K 5% 1/4W	
R1118	1-249-411-11	CARBON 330 5% 1/4W	
R1119	1-247-903-00	CARBON 1M 5% 1/4W	
R1125	1-249-417-11	CARBON 1K 5% 1/4W F	
R1126	1-247-807-31	CARBON 100 5% 1/4W	
R1127	1-247-807-31	CARBON 100 5% 1/4W	
R1128	1-247-807-31	CARBON 100 5% 1/4W	
R1151	1-249-417-11	CARBON 1K 5% 1/4W F	
R1153	1-249-437-11	CARBON 47K 5% 1/4W	
R1155	1-249-441-11	CARBON 100K 5% 1/4W	
R1201	1-249-437-11	CARBON 47K 5% 1/4W	
R1202	1-249-437-11	CARBON 47K 5% 1/4W	
R1203	1-249-437-11	CARBON 47K 5% 1/4W	
R1204	1-249-417-11	CARBON 1K 5% 1/4W F	
R1205	1-249-417-11	CARBON 1K 5% 1/4W F	
R1206	1-249-437-11	CARBON 47K 5% 1/4W	
R1208	1-249-426-11	CARBON 5.6K 5% 1/4W	
R1209	1-249-426-11	CARBON 5.6K 5% 1/4W	
R1210	1-249-437-11	CARBON 47K 5% 1/4W	
R1211	1-249-437-11	CARBON 47K 5% 1/4W	
R1212	1-249-437-11	CARBON 47K 5% 1/4W	
R1213	1-249-437-11	CARBON 47K 5% 1/4W	
R1214	1-249-437-11	CARBON 47K 5% 1/4W	
R1215	1-247-863-91	CARBON 22K 5% 1/4W	
R1216	1-247-863-91	CARBON 22K 5% 1/4W	
R1217	1-247-863-91	CARBON 22K 5% 1/4W	

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Ref. No.	Part No.	Description			Remark
R1218	1-247-863-91	CARBON	22K	5%	1/4W
R1219	1-247-863-91	CARBON	22K	5%	1/4W
R1251	1-249-437-11	CARBON	47K	5%	1/4W
R1252	1-249-437-11	CARBON	47K	5%	1/4W
R1253	1-249-437-11	CARBON	47K	5%	1/4W
R1254	1-249-417-11	CARBON	1K	5%	1/4W F
R1255	1-249-417-11	CARBON	1K	5%	1/4W F
R1301	1-247-863-91	CARBON	22K	5%	1/4W
R1303	1-249-437-11	CARBON	47K	5%	1/4W
R1304	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1305	1-247-881-00	CARBON	120K	5%	1/4W
R1306	1-249-417-11	CARBON	1K	5%	1/4W F
R1307	1-249-441-11	CARBON	100K	5%	1/4W
R1308	1-249-429-11	CARBON	10K	5%	1/4W
R1309	1-247-807-31	CARBON	100	5%	1/4W
R1310	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1311	1-249-429-11	CARBON	10K	5%	1/4W
R1312	1-249-426-11	CARBON	5.6K	5%	1/4W
R1313	1-249-429-11	CARBON	10K	5%	1/4W
R1314	1-249-437-11	CARBON	47K	5%	1/4W
R1315	1-249-441-11	CARBON	100K	5%	1/4W
R1316	1-249-417-11	CARBON	1K	5%	1/4W F
R1317	1-249-429-11	CARBON	10K	5%	1/4W
R1318	1-249-441-11	CARBON	100K	5%	1/4W
R1319	1-249-417-11	CARBON	1K	5%	1/4W F
R1320	1-249-429-11	CARBON	10K	5%	1/4W
R1321	1-247-807-31	CARBON	100	5%	1/4W
R1322	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1323	1-249-417-11	CARBON	1K	5%	1/4W F
R1324	1-249-429-11	CARBON	10K	5%	1/4W
R1325	1-247-807-31	CARBON	100	5%	1/4W
R1326	1-247-863-91	CARBON	22K	5%	1/4W
R1327	1-249-417-11	CARBON	1K	5%	1/4W F
R1328	1-249-417-11	CARBON	1K	5%	1/4W F
R1331	1-247-807-31	CARBON	100	5%	1/4W (US)
R1332	1-249-437-11	CARBON	47K	5%	1/4W (US)
R1335	1-249-417-11	CARBON	1K	5%	1/4W F (US)
R1336	1-249-417-11	CARBON	1K	5%	1/4W F (US)
R1337	1-249-417-11	CARBON	1K	5%	1/4W F (US)
R1338	1-249-413-11	CARBON	470	5%	1/4W F (US)
R1339	1-249-437-11	CARBON	47K	5%	1/4W (US)
R1351	1-247-863-91	CARBON	22K	5%	1/4W
R1353	1-249-437-11	CARBON	47K	5%	1/4W
R1354	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1355	1-247-881-00	CARBON	120K	5%	1/4W
R1356	1-249-417-11	CARBON	1K	5%	1/4W F
R1357	1-249-441-11	CARBON	100K	5%	1/4W
R1358	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R1359	1-247-807-31	CARBON	100	5%	1/4W
R1401	1-249-441-11	CARBON	100K	5%	1/4W
R1402	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1403	1-249-435-11	CARBON	33K	5%	1/4W
R1404	1-249-411-11	CARBON	330	5%	1/4W
R1405	1-249-441-11	CARBON	100K	5%	1/4W
R1406	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1407	1-249-435-11	CARBON	33K	5%	1/4W
R1408	1-249-411-11	CARBON	330	5%	1/4W
R1409	1-249-441-11	CARBON	100K	5%	1/4W
R1410	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1411	1-249-435-11	CARBON	33K	5%	1/4W
R1412	1-249-411-11	CARBON	330	5%	1/4W
R1413	1-249-429-11	CARBON	10K	5%	1/4W
R1414	1-249-429-11	CARBON	10K	5%	1/4W
R1415	1-249-432-11	CARBON	18K	5%	1/4W
R1416	1-249-441-11	CARBON	100K	5%	1/4W
R1418	1-247-838-00	CARBON	2K	5%	1/4W
R1419	1-249-413-11	CARBON	470	5%	1/4W F
R1420	1-247-840-00	CARBON	2.4K	5%	1/4W
R1421	1-249-417-11	CARBON	1K	5%	1/4W F
R1422	1-249-422-11	CARBON	2.7K	5%	1/4W F
R1423	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1424	1-249-424-11	CARBON	3.9K	5%	1/4W F
R1425	1-249-431-11	CARBON	15K	5%	1/4W
R1426	1-249-424-11	CARBON	3.9K	5%	1/4W F
R1427	1-249-435-11	CARBON	33K	5%	1/4W
R1428	1-249-421-11	CARBON	2.2K	5%	1/4W F
R1429	1-247-887-00	CARBON	220K	5%	1/4W
R1431	1-249-425-11	CARBON	4.7K	5%	1/4W F
R1432	1-247-883-00	CARBON	150K	5%	1/4W
R1433	1-249-418-11	CARBON	1.2K	5%	1/4W F
R1434	1-249-441-11	CARBON	100K	5%	1/4W
R1435	1-249-429-11	CARBON	10K	5%	1/4W
R1436	1-249-421-11	CARBON	2.2K	5%	1/4W F
R1437	1-249-429-11	CARBON	10K	5%	1/4W
R1438	1-249-430-11	CARBON	12K	5%	1/4W
R1439	1-249-434-11	CARBON	27K	5%	1/4W
R1440	1-249-441-11	CARBON	100K	5%	1/4W
R1441	1-249-417-11	CARBON	1K	5%	1/4W F
R1442	1-249-429-11	CARBON	10K	5%	1/4W
R1443	1-247-807-31	CARBON	100	5%	1/4W
R1501	1-249-417-11	CARBON	1K	5%	1/4W F
R1502	1-247-807-31	CARBON	100	5%	1/4W
R1520	1-249-429-11	CARBON	10K	5%	1/4W
R1522	1-247-843-11	CARBON	3.3K	5%	1/4W
R1526	1-247-843-11	CARBON	3.3K	5%	1/4W
R1530	1-249-437-11	CARBON	47K	5%	1/4W
R1532	1-249-441-11	CARBON	100K	5%	1/4W
R1533	1-249-437-11	CARBON	47K	5%	1/4W
R1534	1-247-807-31	CARBON	100	5%	1/4W
R1535	1-249-429-11	CARBON	10K	5%	1/4W
R1537	1-249-429-11	CARBON	10K	5%	1/4W
R1539	1-249-411-11	CARBON	330	5%	1/4W

Ref. No.	Part No.	Description			Remark
R1540	1-249-403-11	CARBON	68	5%	1/4W F
R1541	1-249-411-11	CARBON	330	5%	1/4W
R1542	1-249-411-11	CARBON	330	5%	1/4W
R1543	1-249-411-11	CARBON	330	5%	1/4W
R1544	1-249-417-11	CARBON	1K	5%	1/4W F
R1558	1-249-437-11	CARBON	47K	5%	1/4W
R1559	1-249-437-11	CARBON	47K	5%	1/4W
R1570	1-249-413-11	CARBON	470	5%	1/4W F
R1701	1-247-883-00	CARBON	150K	5%	1/4W
R1702	1-247-883-00	CARBON	150K	5%	1/4W
R1703	1-249-440-11	CARBON	82K	5%	1/4W
R1704	1-249-440-11	CARBON	82K	5%	1/4W
R1705	1-247-883-00	CARBON	150K	5%	1/4W
⚠R1706	1-249-407-11	CARBON	150	5%	1/4W F
⚠R1707	1-249-407-11	CARBON	150	5%	1/4W F
⚠R1708	1-249-407-11	CARBON	150	5%	1/4W F
⚠R1709	1-249-407-11	CARBON	150	5%	1/4W F
R1711	1-247-887-00	CARBON	220K	5%	1/4W
R1712	1-249-435-11	CARBON	33K	5%	1/4W
R1713	1-249-428-11	CARBON	8.2K	5%	1/4W F
R1714	1-249-417-11	CARBON	1K	5%	1/4W F
R1715	1-249-417-11	CARBON	1K	5%	1/4W F
R1716	1-247-863-91	CARBON	22K	5%	1/4W
R1717	1-249-437-11	CARBON	47K	5%	1/4W
R1910	1-249-431-11	CARBON	15K	5%	1/4W
⚠R1912	1-249-406-11	CARBON	120	5%	1/4W F
R1913	1-249-429-11	CARBON	10K	5%	1/4W
		< RELAY >			
RY1701	1-755-142-11	RELAY			
RY1702	1-755-142-11	RELAY			
RY1703	1-755-142-11	RELAY			
RY1704	1-755-142-11	RELAY			
RY1901	1-515-840-11	RELAY			
		< SWITCH >			
S1101	1-762-708-11	SWITCH, PUSH (1 KEY) (CENTER SPEAKER)			
		< TERMINAL >			
TM1601	1-694-054-11	TERMINAL BOARD (SPEAKER) (6P) (REAR SPEAKER, EXTERNAL CENTER SPEAKER)			
		< VIBRATOR >			
X1101	1-579-125-11	VIBRATOR, CERAMIC (8MHz)			
X1501	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
**********					
*	1-660-822-11	T1 BOARD ********			
	1-533-399-31	HOLDER FUSE			

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN1901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
		< FUSE >			
⚠F1901	1-533-419-11	FUSE (DIA.5) (4.0A 125V) (US)			
⚠F1901	1-532-502-51	FUSE, TIME LAG (1.25A 250V) (AUS)			
**********					
*	1-660-823-11	T2 BOARD ********			
	1-533-293-11	FUSE HOLDER			
		< CONNECTOR >			
CN1904	1-691-768-11	PLUG (MICRO CONNECTOR) 6P			
		< FUSE >			
⚠F1902	1-533-310-11	FUSE (6.3A 125V) (US)			
⚠F1902	1-532-506-51	FUSE, TIME LAG (6.3A 250V) (AUS)			
⚠F1903	1-533-310-11	FUSE (6.3A 125V) (US)			
⚠F1903	1-532-506-51	FUSE, TIME LAG (6.3A 250V) (AUS)			
		< RESISTOR >			
⚠R1901	1-249-474-11	CARBON	1	5%	1/2W F
⚠R1902	1-249-474-11	CARBON	1	5%	1/2W F
**********					
*	A-4390-755-A	TC BOARD, COMPLETE **********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C211	1-136-157-00	FILM	0.022uF	5%	50V
C212	1-136-157-00	FILM	0.022uF	5%	50V
C213	1-136-165-00	FILM	0.1uF	5%	50V
C214	1-136-165-00	FILM	0.1uF	5%	50V
C215	1-124-472-11	ELECT	470uF	20%	10V
C216	1-124-472-11	ELECT	470uF	20%	10V
C217	1-136-163-00	FILM	0.068uF	5%	50V
C218	1-136-163-00	FILM	0.068uF	5%	50V
C219	1-126-963-11	ELECT	4.7uF	20%	50V
C220	1-126-963-11	ELECT	4.7uF	20%	50V
C221	1-124-903-11	ELECT	1uF	20%	50V
C222	1-124-903-11	ELECT	1uF	20%	50V
C223	1-124-903-11	ELECT	1uF	20%	50V
C224	1-124-903-11	ELECT	1uF	20%	50V
C225	1-162-288-31	CERAMIC	330PF	10%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TC

Ref. No.	Part No.	Description			Remark
C226	1-162-288-31	CERAMIC	330PF	10%	50V
C227	1-126-963-11	ELECT	4.7uF	20%	50V
C228	1-126-963-11	ELECT	4.7uF	20%	50V
C229	1-124-907-11	ELECT	10uF	20%	50V
C230	1-124-907-11	ELECT	10uF	20%	50V
C231	1-126-940-11	ELECT	330uF	20%	10V
C232	1-126-940-11	ELECT	330uF	20%	10V
C233	1-124-472-11	ELECT	470uF	20%	10V
C234	1-124-472-11	ELECT	470uF	20%	10V
C235	1-124-443-00	ELECT	100uF	20%	10V
C236	1-124-907-11	ELECT	10uF	20%	50V
C237	1-124-907-11	ELECT	10uF	20%	50V
C238	1-124-907-11	ELECT	10uF	20%	50V
C239	1-124-907-11	ELECT	10uF	20%	50V
C240	1-124-902-00	ELECT	0.47uF	20%	50V
C241	1-124-473-11	ELECT	1000uF	20%	10V
C242	1-124-473-11	ELECT	1000uF	20%	10V
C243	1-124-473-11	ELECT	1000uF	20%	10V
C244	1-124-473-11	ELECT	1000uF	20%	10V
C245	1-124-479-11	ELECT	330uF	20%	25V
C246	1-124-479-11	ELECT	330uF	20%	25V
C247	1-124-902-00	ELECT	0.47uF	20%	50V
C248	1-124-902-00	ELECT	0.47uF	20%	50V
C249	1-162-282-31	CERAMIC	100PF	10%	50V
C251	1-161-494-00	CERAMIC	0.022uF		25V
C252	1-137-367-11	FILM	0.0033uF	5%	50V
C254	1-162-217-31	CERAMIC	56PF	5%	50V
C255	1-126-961-11	ELECT	2.2uF	20%	50V
C256	1-126-961-11	ELECT	2.2uF	20%	50V
C306	1-164-159-11	CERAMIC	0.1uF		50V
C307	1-164-159-11	CERAMIC	0.1uF		50V
C309	1-124-907-11	ELECT	10uF	20%	50V
C310	1-124-907-11	ELECT	10uF	20%	50V
C311	1-124-473-11	ELECT	1000uF	20%	10V
C312	1-124-473-11	ELECT	1000uF	20%	10V
C313	1-164-159-11	CERAMIC	0.1uF		50V
C314	1-124-471-00	ELECT	1000uF	20%	6.3V
C315	1-162-288-31	CERAMIC	330PF	10%	50V
C316	1-164-159-11	CERAMIC	0.1uF		50V
C317	1-164-159-11	CERAMIC	0.1uF		50V
C318	1-124-480-11	ELECT	470uF	20%	25V
		< CONNECTOR >			
* CN200	1-564-508-11	PLUG, CONNECTOR 5P			
* CN201	1-691-916-11	CONNECTOR, BOARD TO BOARD			
* CN202	1-691-916-11	CONNECTOR, BOARD TO BOARD			
CN203	1-770-407-11	CONNECTOR, BOARD TO BOARD 12P			
CN204	1-770-407-11	CONNECTOR, BOARD TO BOARD 12P			
* CN301	1-568-826-11	SOCKET, CONNECTOR 7P			
		< DIODE >			
D201	8-719-987-63	DIODE 1N4148M			
D202	8-719-987-63	DIODE 1N4148M			
D301	8-719-024-99	DIODE 11ES2-NTA2B			
D302	8-719-024-99	DIODE 11ES2-NTA2B			
		< EARTH >			
* EP301	1-537-738-21	TERMINAL, EARTH			
		< IC >			
IC201	8-759-634-51	IC M5218AP			
IC202	8-752-060-46	IC CXA1561S			
IC203	8-752-055-61	IC CXA1578P			
IC301	8-759-397-78	IC HD6433522P01F			
IC302	8-759-803-42	IC LA6500-FA			
IC303	8-759-165-82	IC PST600E-T			
		< COIL >			
L201	1-408-080-00	INDUCTOR 100uH			
L202	1-408-080-00	INDUCTOR 100uH			
L203	1-410-781-11	INDUCTOR 33mH			
L301	1-408-080-00	INDUCTOR 100uH			
		< TRANSISTOR >			
Q200	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q201	8-729-900-80	TRANSISTOR DTC114ES			
Q202	8-729-900-80	TRANSISTOR DTC114ES			
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q206	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q207	8-729-422-57	TRANSISTOR UN4111			
Q208	8-729-900-80	TRANSISTOR DTC114ES			
Q232	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q233	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q301	8-729-801-94	TRANSISTOR 2SD1387-4			
Q302	8-729-422-57	TRANSISTOR UN4111			
Q303	8-729-422-57	TRANSISTOR UN4111			
Q304	8-729-422-57	TRANSISTOR UN4111			
Q305	8-729-422-57	TRANSISTOR UN4111			
Q306	8-729-422-57	TRANSISTOR UN4111			
Q307	8-729-422-57	TRANSISTOR UN4111			
Q309	8-729-900-80	TRANSISTOR DTC114ES			
Q312	8-729-422-57	TRANSISTOR UN4111			
Q313	8-729-422-57	TRANSISTOR UN4111			
		< RESISTOR >			
R211	1-249-421-11	CARBON	2.2K	5%	1/4W F
R212	1-249-421-11	CARBON	2.2K	5%	1/4W F
R213	1-247-843-11	CARBON	3.3K	5%	1/4W
R214	1-247-843-11	CARBON	3.3K	5%	1/4W
R215	1-247-887-00	CARBON	220K	5%	1/4W
R216	1-247-887-00	CARBON	220K	5%	1/4W
R219	1-215-452-00	METAL	20K	1%	1/4W
R220	1-249-433-11	CARBON	22K	5%	1/4W
R221	1-249-417-11	CARBON	1K	5%	1/4W F
R222	1-249-433-11	CARBON	22K	5%	1/4W

Ref. No.	Part No.	Description			Remark	
R223	1-249-417-11	CARBON	1K	5%	1/4W	F
R224	1-249-433-11	CARBON	22K	5%	1/4W	
R225	1-249-433-11	CARBON	22K	5%	1/4W	
R226	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R227	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R229	1-249-429-11	CARBON	10K	5%	1/4W	
R230	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R231	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R232	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R233	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R234	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R235	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R236	1-247-807-31	CARBON	100	5%	1/4W	
R237	1-249-417-11	CARBON	1K	5%	1/4W	F
R238	1-249-441-11	CARBON	100K	5%	1/4W	
R239	1-215-455-00	METAL	27K	1%	1/4W	
R242	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R243	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R244	1-249-430-11	CARBON	12K	5%	1/4W	
R245	1-249-430-11	CARBON	12K	5%	1/4W	
R248	1-249-417-11	CARBON	1K	5%	1/4W	F
R249	1-249-441-11	CARBON	100K	5%	1/4W	
R250	1-249-441-11	CARBON	100K	5%	1/4W	
R251	1-247-838-00	CARBON	2K	5%	1/4W	
R252	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R255	1-249-429-11	CARBON	10K	5%	1/4W	
R256	1-249-429-11	CARBON	10K	5%	1/4W	
R257	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R259	1-249-437-11	CARBON	47K	5%	1/4W	
R260	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R261	1-249-441-11	CARBON	100K	5%	1/4W	
R262	1-247-843-11	CARBON	3.3K	5%	1/4W	
R263	1-249-441-11	CARBON	100K	5%	1/4W	
R264	1-249-429-11	CARBON	10K	5%	1/4W	
R265	1-249-441-11	CARBON	100K	5%	1/4W	
R266	1-249-417-11	CARBON	1K	5%	1/4W	F
R267	1-249-432-11	CARBON	18K	5%	1/4W	
R268	1-249-435-11	CARBON	33K	5%	1/4W	
⚠R302	1-249-456-11	CARBON	5.6	5%	1/4W	
R303	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R304	1-249-429-11	CARBON	10K	5%	1/4W	
R305	1-247-862-11	CARBON	20K	5%	1/4W	
R306	1-249-430-11	CARBON	12K	5%	1/4W	
R307	1-249-433-11	CARBON	22K	5%	1/4W	
R308	1-249-429-11	CARBON	10K	5%	1/4W	
R309	1-249-433-11	CARBON	22K	5%	1/4W	
R310	1-249-433-11	CARBON	22K	5%	1/4W	
R311	1-247-807-31	CARBON	100	5%	1/4W	
R312	1-249-381-11	CARBON	1	5%	1/4W	F
R313	1-249-381-11	CARBON	1	5%	1/4W	F
R314	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R315	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R316	1-249-434-11	CARBON	27K	5%	1/4W	
R317	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-249-409-11	CARBON	220	5%	1/4W	F
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-437-11	CARBON	47K	5%	1/4W	
R323	1-249-437-11	CARBON	47K	5%	1/4W	
R324	1-249-437-11	CARBON	47K	5%	1/4W	
R325	1-249-437-11	CARBON	47K	5%	1/4W	
R326	1-249-437-11	CARBON	47K	5%	1/4W	
R327	1-249-437-11	CARBON	47K	5%	1/4W	
R328	1-249-429-11	CARBON	10K	5%	1/4W	
R329	1-247-807-31	CARBON	100	5%	1/4W	
R330	1-247-807-31	CARBON	100	5%	1/4W	
R331	1-247-807-31	CARBON	100	5%	1/4W	
R332	1-247-807-31	CARBON	100	5%	1/4W	
R333	1-247-807-31	CARBON	100	5%	1/4W	
R334	1-247-807-31	CARBON	100	5%	1/4W	
R340	1-249-429-11	CARBON	10K	5%	1/4W	

< VARIABLE RESISTOR >

RV203	1-230-496-11	RES, ADJ, CARBON 10K			
RV204	1-230-496-11	RES, ADJ, CARBON 10K			

< VIBRATOR >

X301	1-767-125-21	VIBRATOR, CERAMIC (4MHz)			

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*	1-660-827-11	TRANS BOARD			

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< CAPACITOR >

C951	1-136-153-00	FILM	0.01uF	5%	50V
C952	1-164-159-11	CERAMIC	0.1uF		50V
C953	1-164-159-11	CERAMIC	0.1uF		50V
C954	1-164-159-11	CERAMIC	0.1uF		50V
C955	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

* CN951	1-564-522-11	PLUG, CONNECTOR 7P			
* CN952	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P			

< RESISTOR >

⚠R951	1-212-934-00	FUSIBLE	1	5%	1/2W F
⚠R952	1-219-120-00	FUSIBLE	0.15	5%	1/4W F
⚠R953	1-219-120-00	FUSIBLE	0.15	5%	1/4W F
⚠R954	1-212-934-00	FUSIBLE	1	5%	1/2W F
⚠R955	1-202-725-00	SOLID	3.3M	10%	1/2W

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Replace only with part number specified.

VIDEO

Ref. No.	Part No.	Description				Remark
*	A-4390-756-A	VIDEO BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C651	1-104-664-11	ELECT	47uF	20%	10V	
C652	1-126-941-11	ELECT	470uF	20%	6.3V	
C653	1-104-664-11	ELECT	47uF	20%	10V	
C654	1-126-941-11	ELECT	470uF	20%	6.3V	
C655	1-104-664-11	ELECT	47uF	20%	10V	
C656	1-126-941-11	ELECT	470uF	20%	6.3V	
C658	1-104-664-11	ELECT	47uF	20%	10V	
C659	1-162-199-31	CERAMIC	10PF	5%	50V	
		< CONNECTOR >				
* CN601	1-568-848-11	SOCKET, CONNECTOR 5P				
		< IC >				
IC610	8-759-061-95	IC SN761200				
		< JACK >				
J602	1-766-400-11	JACK, PIN 2P (VIDEO 1 VIDEO IN/OUT)				
J603	1-766-399-11	JACK, PIN 3P (MONITOR VIDEO OUT, VIDEO 2 VIDEO IN/OUT)				
		< COIL >				
L603	1-410-521-11	INDUCTOR 100uH				
		< TRANSISTOR >				
Q684	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q685	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q686	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		< RESISTOR >				
R641	1-249-437-11	CARBON	47K	5%	1/4W	
R642	1-249-437-11	CARBON	47K	5%	1/4W	
R643	1-247-807-31	CARBON	100	5%	1/4W	
R644	1-247-807-31	CARBON	100	5%	1/4W	
R645	1-247-807-31	CARBON	100	5%	1/4W	
R646	1-247-807-31	CARBON	100	5%	1/4W	
R647	1-247-807-31	CARBON	100	5%	1/4W	
R648	1-247-807-31	CARBON	100	5%	1/4W	
R649	1-249-429-11	CARBON	10K	5%	1/4W	
R650	1-249-403-11	CARBON	68	5%	1/4W	F
R651	1-247-804-11	CARBON	75	5%	1/4W	
R652	1-249-429-11	CARBON	10K	5%	1/4W	
R653	1-249-403-11	CARBON	68	5%	1/4W	F
R654	1-247-804-11	CARBON	75	5%	1/4W	
R655	1-249-429-11	CARBON	10K	5%	1/4W	
R656	1-249-403-11	CARBON	68	5%	1/4W	F
R663	1-249-435-11	CARBON	33K	5%	1/4W	
R664	1-249-429-11	CARBON	10K	5%	1/4W	

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
4	1-769-950-11	WIRE (FLAT TYPE)(11 CORE)	
56	1-533-223-11	HOLDER, FUSE	
169	1-769-882-11	WIRE (FLAT TYPE)(7 CORE)	
174	1-233-545-11	ENCAPSULATED COMPONENT (AUS)	
174	1-233-544-11	ENCAPSULATED COMPONENT (US)	
181	1-769-848-11	WIRE (FLAT TYPE)(5 CORE)	
182	1-690-589-31	WIRE (FLAT TYPE)(13 CORE)	
183	1-773-302-11	WIRE (FLAT TYPE)(29 CORE)	
267	1-638-983-11	MOTER FLEXIBLE BOARD	
⚠510	8-848-263-21	OPTICAL PICK-UP KSM-2101BBM(S)	
⚠CNP951	1-575-042-21	CORD, POWER (US)	
⚠CNP951	1-696-845-11	CORD, POWER (AUS)	
⚠CNP1901	1-575-042-21	CORD, POWER (US)	
⚠CNP1901	1-696-845-11	CORD, POWER (AUS)	
FL401	1-517-551-11	INDICATOR TUBE, FLUORESCENT	
HRPE1	A-2004-527-A	DECK ASSY, HEAD	
M101	X-3365-377-2	MOTOR ASSY (REEL)	
M102	X-3363-501-2	MOTOR ASSY (CAPSTAN)	
M103	X-4947-449-1	MOTOR ASSY, LOADING (LOADING)	
M104	X-4947-446-1	MOTOR ASSY, STOCKER (STOCKER)	
M901	X-2625-133-1	T.T CHASSIS ASSY (MB)(SPINDLE)	
M902	X-2625-132-1	MOTOR GEAR ASSY (MB)(SLED)	
SP901	1-504-875-11	SPEAKER (10CM)(FRONT)	
SP902	1-504-874-11	SPEAKER (5CM)(CENTER)	
SP903	1-505-457-11	SPEAKER (16CM)(WOOFER)	
SP904	1-504-875-11	SPEAKER (10CM)(FRONT)	
SP905	1-504-874-11	SPEAKER (5CM)(CENTER)	
SP906	1-505-457-11	SPEAKER (16CM)(WOOFER)	
SP907	1-504-877-11	SPEAKER (8CM)(SURROUND)	
SP908	1-504-877-11	SPEAKER (8CM)(SURROUND)	
⚠T1901	1-429-633-11	TRANSFORMER, POWER (US)	
⚠T1901	1-431-327-11	TRANSFORMER, POWER (AUS)	
⚠T951	1-429-632-11	TRANSFORMER, POWER (US)	
⚠T951	1-431-439-11	TRANSFORMER, POWER (AUS)	

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-698-11	COMMANDER, STANDARD (RM-U100AV)	
	1-501-659-41	ANTENNA (FM)	
	1-501-721-11	ANTENNA (LOOP)	
	1-751-347-11	CORD, CONNECTION	
	1-765-120-21	CORD, CONNECTION	
	1-765-245-11	CORD, CONNECTION	
	1-777-117-11	CORD (WITH CONNECTOR)(15P)	
	3-856-758-11	MANUAL, INSTRUCTION (ENGLISH)	
	4-975-274-01	BASE	
	4-983-536-01	COVER, BATTERY (for RM-U100AV)	
*	4-984-105-01	INDIVIDUAL CARTON	
*	4-984-106-01	CUSHION (UPPER)	
*	4-984-107-01	CUSHION (LOWER)	
	7-621-846-58	SCREW (4X20), TAPPING	
*	A-4307-942-A	SS-SR151 // M6 (A) (U)	

****

****
HARDWARE LIST
****

#1	7-621-846-60	SCREW (4X25), TAPPING	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-682-567-04	SCREW +BVTT 4X25 (S)	
#4	7-685-659-79	SCREW +BVTP 4X8 TYPE2 IT-3	
#5	7-685-160-01	SCREW +P 4X10 TYPE1	
#6	7-621-846-58	SCREW (4X20), TAPPING	
#7	7-685-862-09	SCREW +BVTT 2.6X6 (S)	
#8	7-627-556-08	SCREW +P 2.6X2.8	
#9	7-685-861-01	SCREW +BVTT 2.6X5 (S)	
#10	7-621-775-10	SCREW +B 2.6X4	
#11	7-682-544-04	SCREW +P 3X3	
#12	7-685-149-01	SCREW +P 3X14 TYPE1	
#13	7-621-225-25	SCREW +P 2X3	
#14	7-621-775-00	SCREW +B 2.6X3	
#15	7-685-648-79	SCREW, TAPPING	
#16	7-685-132-19	SCREW +BTP 2.6X5 TYPE 2 N-S	
#17	7-685-661-21	SCREW +BVTP 4X12 TYPE 2	
#18	7-685-881-09	SCREW +BVTT 4X8 (S)	

9-960-765-12

Sony Corporation
Home A&V Products Company

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(Shibaura)

SA-VA100

SONY

US Model
Australian Model

SERVICE MANUAL

SUPPLEMENT-1

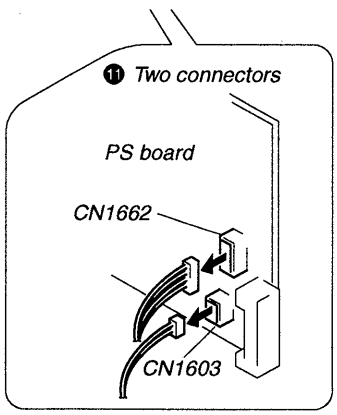
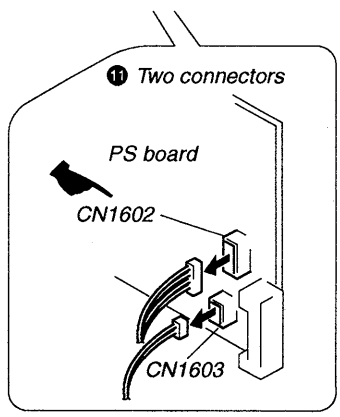
File this supplement with the service manual.

Subject : 1. CORRECTION
2. BOARD AND PARTS CHANGED

(ECN-TA603885)

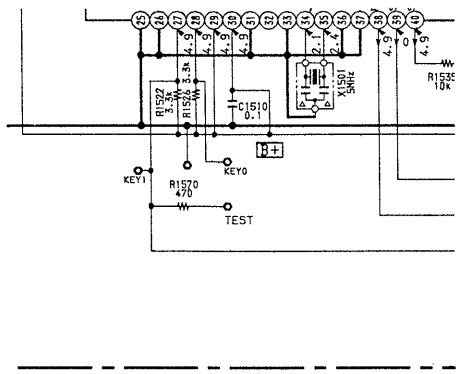
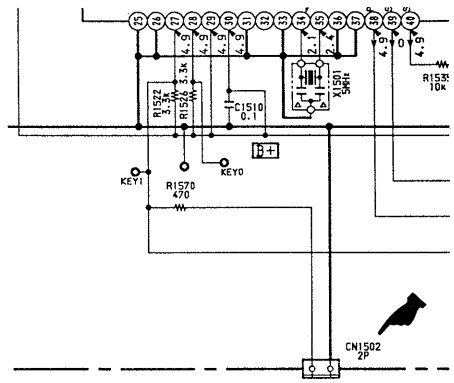
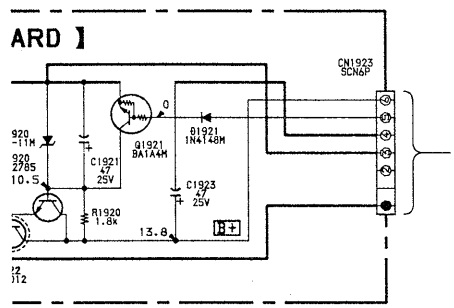
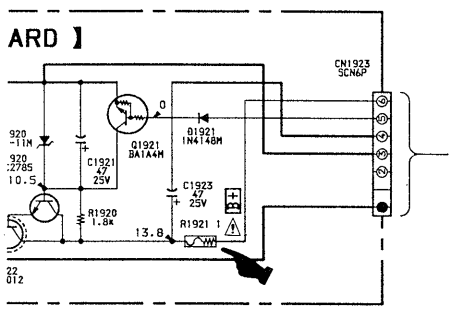
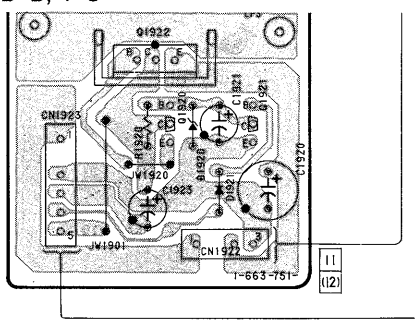
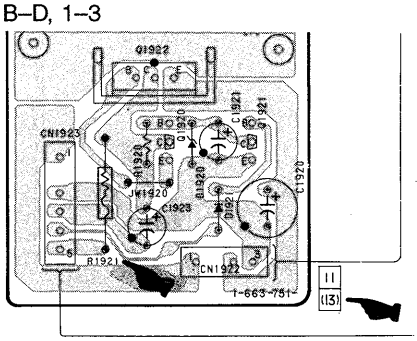
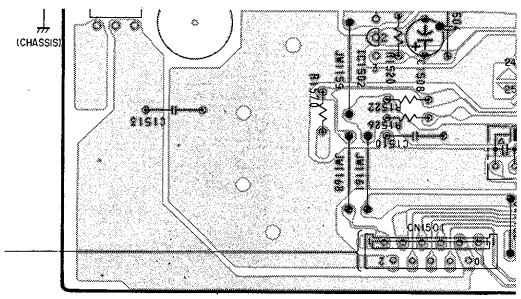
1. CORRECTION

• Correct your service manual as show below.
☛ : indicates corrected portion

Page	INCORRECT	CORRECT
26		

2. BOARD AND PARTS CHANGED

: indicates changed portion.

Page	FORMER	NEW
71	**[SURR 1, SURR 2, PS BOARD]** Location: O–P, 6–8 	**[SURR 1, SURR 2, PS BOARD]** Location: O–P, 6–8 
74	**[REG BOARD]** Location: A–B, 32–37 	**[REG BOARD]** Location: A–B, 32–37 
75	**[REG BOARD]** Location: B–D, 1–3 	**[REG BOARD]** Location: B–D, 1–3 
76	**[SURR 1 BOARD]** Location: K–L, 13–15  (CHASSIS) CN1501 JW1501 JW1502 JW1503 JW1504 JW1505 JW1506 JW1507 JW1508 JW1509 JW1510 JW1511 JW1512 JW1513 JW1514 JW1515 JW1516 JW1517 JW1518 JW1519 JW1520 JW1521 JW1522 JW1523 JW1524 JW1525 JW1526 JW1527 JW1528 JW1529 JW1530 JW1531 JW1532 JW1533 JW1534 JW1535 JW1536 JW1537 JW1538 JW1539 JW1540 JW1541 JW1542 JW1543 JW1544 JW1545 JW1546 JW1547 JW1548 JW1549 JW1550 JW1551 JW1552 JW1553 JW1554 JW1555 JW1556 JW1557 JW1558 JW1559 JW1560 JW1561 JW1562 JW1563 JW1564 JW1565 JW1566 JW1567 JW1568 JW1569 JW1570 JW1571 JW1572 JW1573 JW1574 JW1575 JW1576 JW1577 JW1578 JW1579 JW1580 JW1581 JW1582 JW1583 JW1584 JW1585 JW1586 JW1587 JW1588 JW1589 JW1590 JW1591 JW1592 JW1593 JW1594 JW1595 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JW3169 JW3170 JW3171 JW3172 JW3173 JW3174 JW3175 JW3176 JW3177 JW3178 JW3179 JW3180 JW3181 JW3182 JW3183 JW3184 JW3185 JW3186 JW3187 JW3188 JW3189 JW3190 JW3191 JW3192 JW3193 JW3194 JW3195 JW3196 JW3197 JW3198 JW3199 JW3200 JW3201 JW3202 JW3203 JW3204 JW3205 JW3206 JW3207 JW3208 JW3209 JW3210 JW3211 JW3212 JW3213 JW3214 JW3215 JW3216 JW3217 JW3218 JW3219 JW3220 JW3221 JW3222 JW3223 JW3224 JW3225 JW3226 JW3227 JW3228 JW3229 JW3230 JW3231 JW3232 JW3233 JW3234 JW3235 JW3236 JW3237 JW3238 JW3239 JW3240 JW3241 JW3242 JW3243 JW3244 JW3245 JW3246 JW3247 JW3248 JW3249 JW3250 JW3251 JW3252 JW3253 JW3254 JW3255 JW3256 JW3257 JW3258 JW3259 JW3260 JW3261 JW3262 JW3263 JW3264 JW3265 JW3266 JW3267 JW3268 JW3269 JW3270 JW3271 JW3272 JW3273 JW3274 JW3275 JW3276 JW3277 JW3278 JW3279 JW3280 JW3281 JW3282 JW3283 JW3284 JW3285 JW3286 JW3287 JW3288 JW3289 JW3290 JW3291 JW3292 JW3293 JW3294 JW3295 JW3296 JW3297 JW3298 JW3299 JW3300 JW3301 JW3302 JW3303 JW3304 JW3305 JW3306 JW3307 JW3308 JW3309 JW3310 JW3311 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JW3455 JW3456 JW3457 JW3458 JW3459 JW3460 JW3461 JW3462 JW3463 JW3464 JW3465 JW3466 JW3467 JW3468 JW3469 JW3470 JW3471 JW3472 JW3473 JW3474 JW3475 JW3476 JW3477 JW3478 JW3479 JW3480 JW3481 JW3482 JW3483 JW3484 JW3485 JW3486 JW3487 JW3488 JW3489 JW3490 JW3491 JW3492 JW3493 JW3494 JW3495 JW3496 JW3497 JW3498 JW3499 JW3500 JW3501 JW3502 JW3503 JW3504 JW3505 JW3506 JW3507 JW3508 JW3509 JW3510 JW3511 JW3512 JW3513 JW3514 JW3515 JW3516 JW3517 JW3518 JW3519 JW3520 JW3521 JW3522 JW3523 JW3524 JW3525 JW3526 JW3527 JW3528 JW3529 JW3530 JW3531 JW3532 JW3533 JW3534 JW3535 JW3536 JW3537 JW3538 JW3539 JW3540 JW3541 JW3542 JW3543 JW3544 JW3545 JW3546 JW3547 JW3548 JW3549 JW3550 JW3551 JW3552 JW3553 JW3554 JW3555 JW3556 JW3557 JW3558 JW3559 JW3560 JW3561 JW3562 JW3563 JW3564 JW3565 JW3566 JW3567 JW3568 JW3569 JW3570 JW3571 JW3572 JW3573 JW3574 JW3575 JW3576 JW3577 JW3578 JW3579 JW3580 JW3581 JW3582 JW3583 JW3584 JW3585 JW3586 JW3587 JW3588 JW3589 JW3590 JW3591 JW3592 JW3593 JW3594 JW3595 JW3596 JW3597 JW3598 JW3599 JW3600 JW3601 JW3602 JW3603 JW3604 JW3605 JW3606 JW3607 JW3608 JW3609 JW3610 JW3611 JW3612 JW3613 JW3614 JW3615 JW3616 JW3617 JW3618

Page	FORMER						NEW					
118	Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
			*** MISCELLANEOUS ***						*** MISCELLANEOUS ***			
			*** CD BOARD ***						*** CD BOARD ***			
	R117	1-249-427-11	CARBON	6.8K	5%	1/4W F	R117	1-249-417-11	CARBON	1K	5%	1/4W F
	R118	1-249-417-11	CARBON	1K	5%	1/4W F	R118	1-249-421-11	CARBON	2.2K	5%	1/4W F
	R119	1-247-903-00	CARBON	1M	5%	1/4W	R119	1-247-887-00	CARBON	220K	5%	1/4W
119	R153	1-249-437-11	CARBON	47K	5%	1/4W	R153	1-249-436-11	CARBON	39K	5%	1/4W
	R155	1-247-889-00	CARBON	270K	5%	1/4W	R155	1-249-437-11	CARBON	47K	5%	1/4W
	R156	1-249-433-11	CARBON	22K	5%	1/4W	R156	1-249-436-11	CARBON	39K	5%	1/4W
120			*** FL BOARD ***						*** FL BOARD ***			
	IC403	8-759-373-49	IC NJL54H400				IC403	8-759-459-84	IC NJL56H400			
127			*** REG BOARD ***						*** REG BOARD ***			
			———				⚠R1921	1-217-637-00	FUSIBLE	1	5%	1/4W F
128			*** SURR BOARD *** (Including SURR 1, SURR 2, PS board)						*** SURR BOARD *** (Including SURR 1, SURR 2, PS board)			
			———				CN1502	1-564-505-11	PLUG, CONNECTOR 2P			
131			*** T2 BOARD ***						*** T2 BOARD ***			
	⚠R1901	1-212-934-00	FUSIBLE	1	5%	1/2W F	⚠R1901	1-249-474-11	CARBON	1	5%	1/2W F
	⚠R1902	1-212-934-00	FUSIBLE	1	5%	1/2W F	⚠R1902	1-249-474-11	CARBON	1	5%	1/2W F
133			*** TRANS BOARD ***						*** TRANS BOARD ***			
	⚠R952	1-212-934-00	FUSIBLE	1	5%	1/2W F	⚠R952	1-219-120-11	FUSIBLE	0.15	5%	1/4W F
	⚠R953	1-212-934-00	FUSIBLE	1	5%	1/2W F	⚠R953	1-219-120-11	FUSIBLE	0.15	5%	1/4W F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-960-765-81

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